SYLVANIA

SERVICE MANUAL

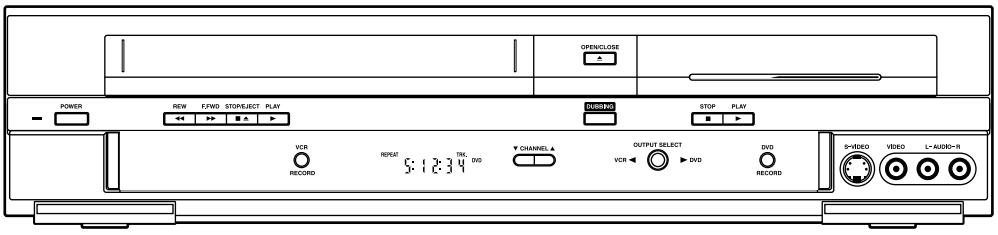
Main Section
- Specifications
- Preparation for Servicing
- Adjustment Procedures
- Schematic Diagrams
- CBA's
- Exploded Views
- Parts List

When servicing the deck mechanism, refer to MK14 Deck Mechanism Section.

Deck Mechanism Part No.: N2460FL

DVD RECORDER & VIDEO CASSETTE RECORDER

DVR90VF



VHS

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

Manufactured under license from Dolby Laboratories.
“Dolby” and the double-D symbol are trademarks of Dolby Laboratories.

MAIN SECTION

DVD RECORDER & VIDEO CASSETTE RECORDER

DVR90VF

Main Section
- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**
- **Exploded Views**
- **Parts List**

TABLE OF CONTENTS

Specifications 1-1-1
Laser Beam Safety Precautions 1-2-1
Important Safety Precautions 1-3-1
Standard Notes for Servicing 1-4-1
Preparation for Servicing. 1-5-1
Cabinet Disassembly Instructions 1-6-1
Electrical Adjustment Instructions 1-7-1
How to Initialize the DVD Recorder & VCR 1-8-1
Firmware Renewal Mode 1-9-1
Function Indicator Symbols. 1-10-1
Block Diagrams 1-11-1
Schematic Diagrams / CBA's and Test Points. 1-12-1
Waveforms 1-13-1
Wiring Diagram < VCR Section > 1-14-1
Wiring Diagram < DVD Section > 1-14-2
System Control Timing Charts 1-15-1
IC Pin Function Descriptions. 1-16-1
Lead Identifications 1-17-1
Exploded Views. 1-18-1
Mechanical Parts List 1-19-1
Electrical Parts List 1-20-1

SPECIFICATIONS

< VCR Section >

Description	Unit	Minimum	Nominal	Maximum	Remark
1. Video					
1-1. Video Output (PB)	Vp-p	0.8	1.0	1.2	SP Mode
1-2. Video Output (R/P)	Vp-p	0.8	1.0	1.2	
1-3. Video S/N Y (R/P)	dB	40	45		SP Mode, W/O Burst
1-4. Video Color S/N AM (R/P)	dB	37	41		SP Mode
1-5. Video Color S/N PM (R/P)	dB	30	36		SP Mode
1-6. Resolution (PB)	Line	230	245		SP Mode
2. Servo					
2-1. Jitter Low	μsec		0.07	0.12	SP Mode
2-2. Wow & Flutter	%		0.3	0.5	SP Mode
3. Normal Audio					
3-1. Output (PB)	dBV	-9	-6	-3	SP Mode
3-2. Output (R/P)	dBV	-9	-6	-1.5	SP Mode
3-3. S/N (R/P)	dB	36	41		SP Mode
3-4. Distortion (R/P)	%		1.0	4.0	SP Mode
3-5. Freq. resp (R/P) at 200Hz	dB	-11	-4		SP Mode
(-20dB ref. 1kHz) at 8kHz	dB	-14	-4		SP Mode
4. Tuner					
4-1. Video output	Vp-p	0.8	1.0	1.2	E-E Mode
4-2. Video S/N	dB	39	42		E-E Mode
4-3. Audio output	dB	-10	-6	-2	E-E Mode
4-4. Audio S/N	dB	40	46		E-E Mode
5. Hi-Fi Audio					
5-1. Output	dBV	-12	-8	-4	SP Mode
5-2. Dynamic Range	dB	70	85		SP Mode
5-3. Freq. resp (6dB B.W)	Hz		20 ~ 20K		SP Mode

Note: Nominal specs represent the design specs. All units should be able to approximate these – some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; In no case should a unit fail to meet limit specs.

< DVD Section >

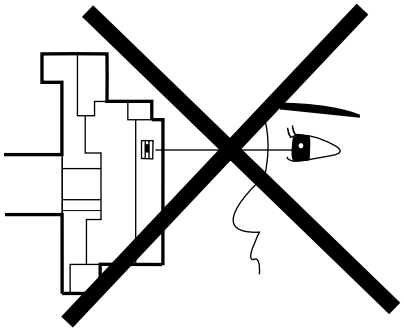
ITEM	CONDITIONS	UNIT	NOMINAL	LIMIT
1. VIDEO				
1-1. Video Output	75 ohm load	Vp-p	1.0	
1-2. S-Video Output				
Y (Luminance)	75 ohm load	Vp-p	1.0	
C (Chrominance)	75 ohm load	Vp-p	0.286	
1-3. Component Output				
Y (Luminance)	75 ohm load	Vp-p	1.0	
Cb (Chrominance)	75 ohm load	Vp-p	0.7	
Cr (Chrominance)	75 ohm load	Vp-p	0.7	
2. AUDIO				
2-1. Output Level		Vrms	2.0	
2-2. Frequency Response				
DVD-VIDEO LPCM	fs = 48kHz 20~22kHz	dB	± 0.5	
Audio CD	fs = 44.1kHz 20~20 kHz	dB	± 0.5	
2-3. Signal/Noise Ratio				
DVD-VIDEO LPCM		dB	90	
CD		dB	90	
REC & Playback	Input: 2 Vrms, Rec Speed: XP	dB	80	
2-4. Dynamic Range				
DVD-VIDEO LPCM		dB	80	
CD		dB	80	
REC & Playback	Input: 2 Vrms, Rec Speed: XP	dB	80	
2-5. THD+N	1 kHz, 0 dB			
DVD-VIDEO LPCM		%	0.01	
CD		%	0.01	
REC & Playback	Input: 2 Vrms, Rec Speed: XP	%	0.01	

NOTES:

1. All Items are measured without pre-emphasis unless otherwise specified.
2. Power supply : AC120 V 60 Hz
4. Ambient temperature : 5 °C ~ 40 °C

LASER BEAM SAFETY PRECAUTIONS

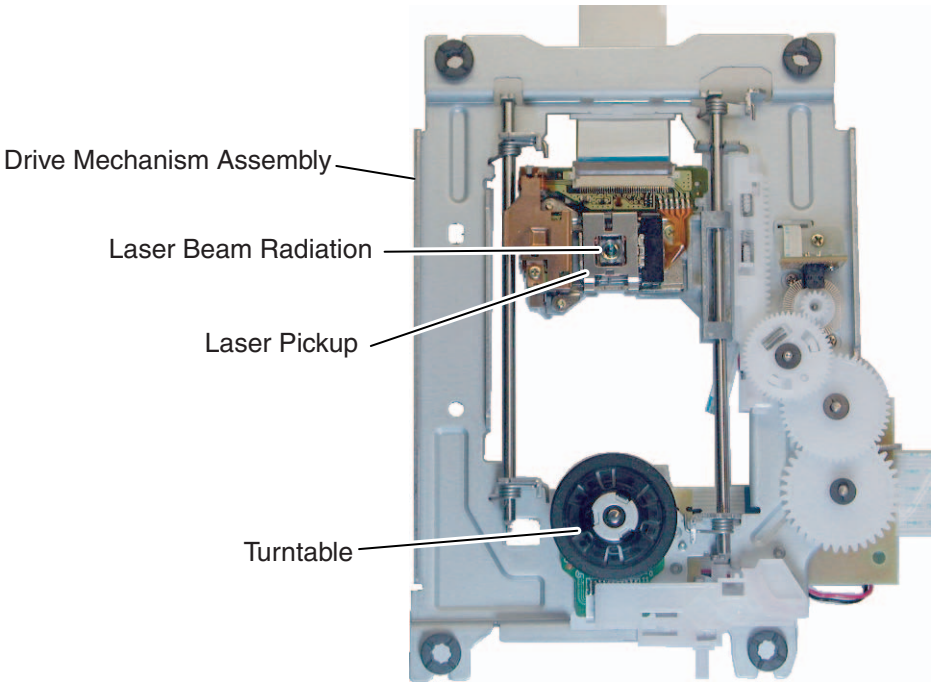
This DVD player uses a pickup that emits a laser beam.



Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30 cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

CAUTION: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.



DANGER - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
CAUTION - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ATTENTION - RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU.
注意 - ここを開くと可視及び不可視のレーザー光が出ます。ビームを直接見たり、触れたりしないでください。

Location: Inside Top of DVD mechanism.

IMPORTANT SAFETY PRECAUTIONS

Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

A. Parts identified by the ⚠ symbol are critical for safety. Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements. Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:
1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:
1) Insulation tape
2) PVC tubing
3) Spacers
4) Insulators for transistors

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).

G. Check that replaced wires do not contact sharp edges or pointed parts.

H. When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.
Replacement procedure
1) Remove the old connector by cutting the wires at a point close to the connector.
Important: Do not re-use a connector. (Discard it.)
2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
4) Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Clearance Distance (d), (d')
120 V	≥ 3.2 mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

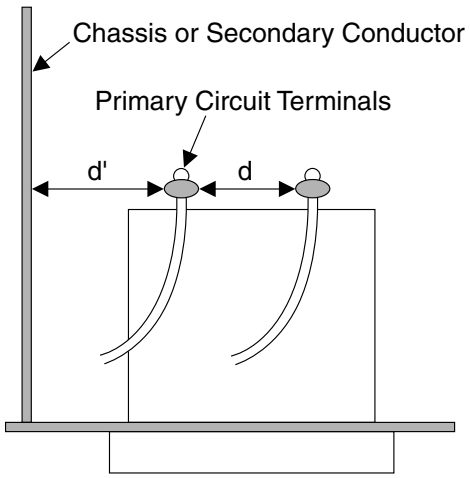


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON):

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

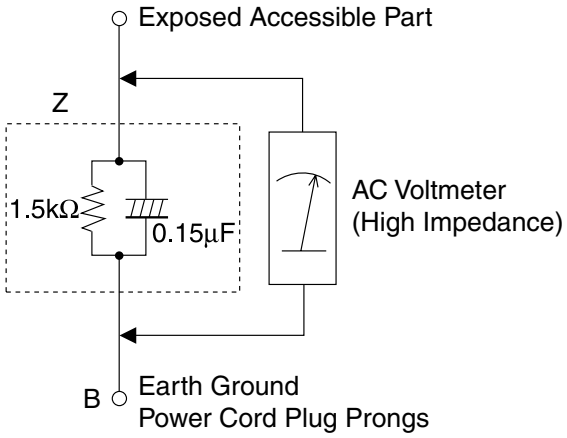


Fig. 2

Table 2: Leakage current ratings for selected areas

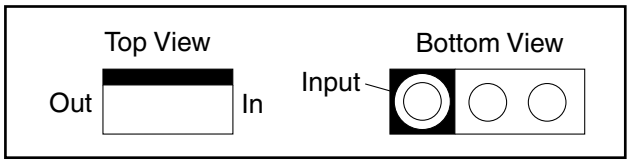
AC Line Voltage	Load Z	Leakage Current (i)	Earth Ground (B) to:
120 V	0.15 μF CAP. & 1.5 kΩ RES. Connected in parallel	i ≤ 0.5 mA Peak	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

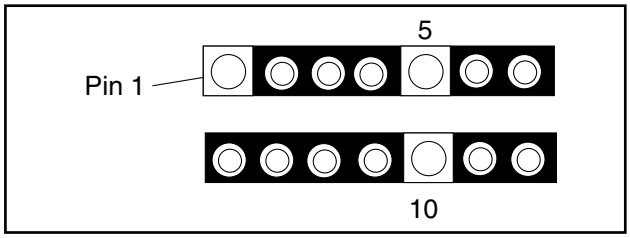
STANDARD NOTES FOR SERVICING

Circuit Board Indications

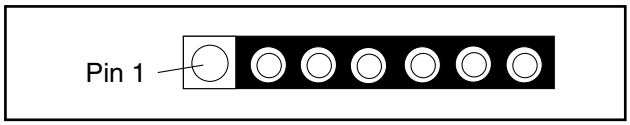
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

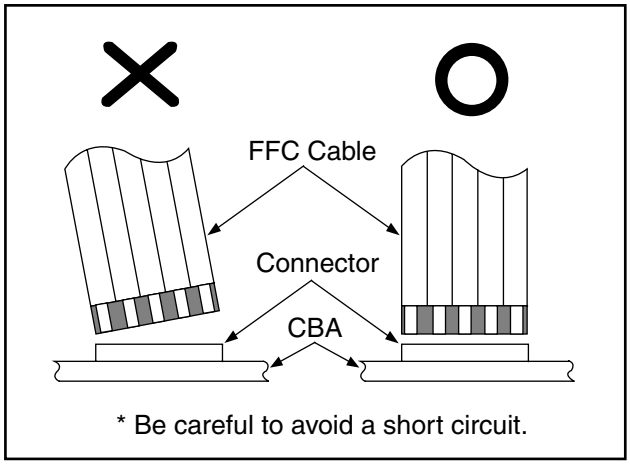


3. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



Pb (Lead) Free Solder

When soldering, be sure to use the Pb free solder.

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

1. Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

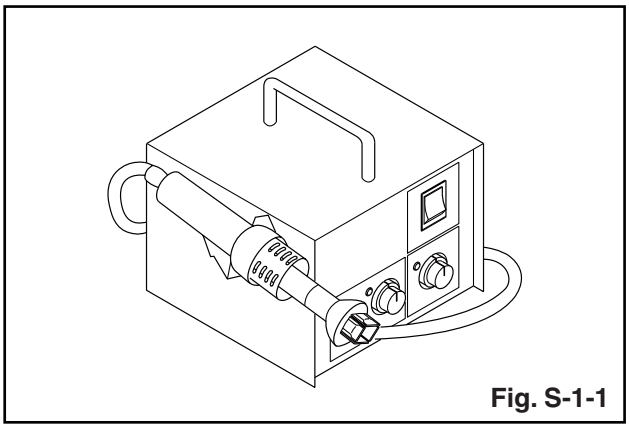


Fig. S-1-1

2. Remove the flat pack-IC with tweezers while applying the hot air.
3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

CAUTION:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)

3. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

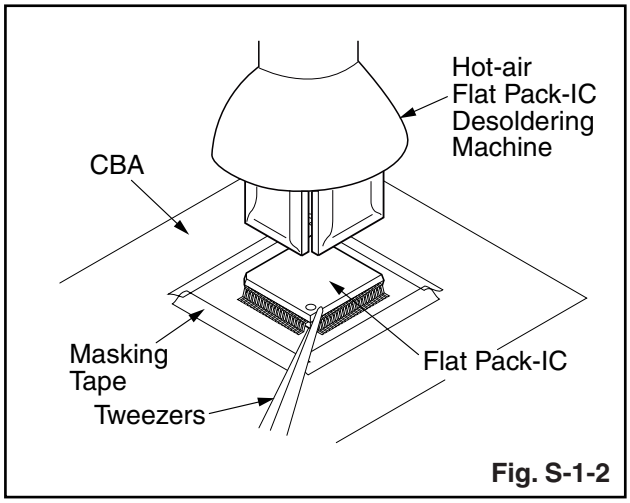


Fig. S-1-2

With Soldering Iron:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

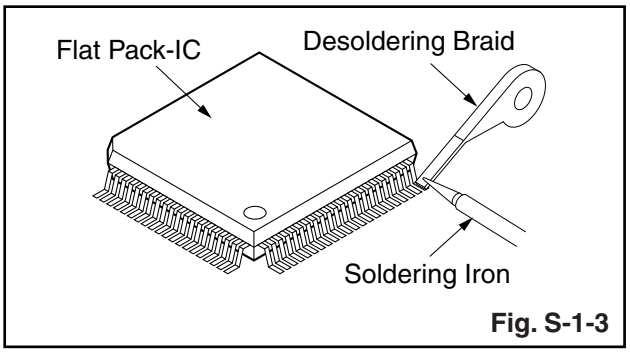


Fig. S-1-3

2. Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

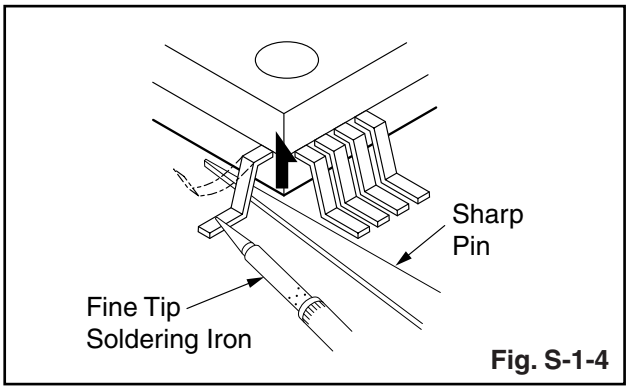


Fig. S-1-4

3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5.
4. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
5. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Note: When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.

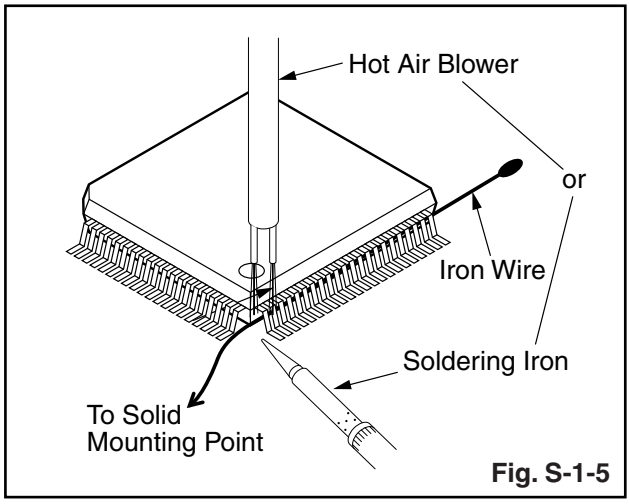


Fig. S-1-5

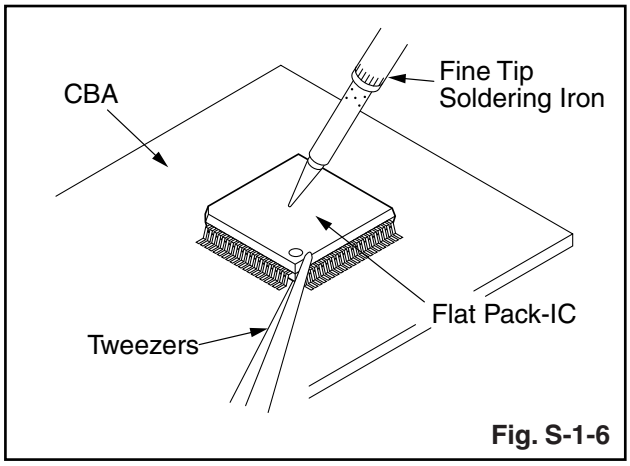


Fig. S-1-6

2. Installation

1. Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.
2. The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
3. Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

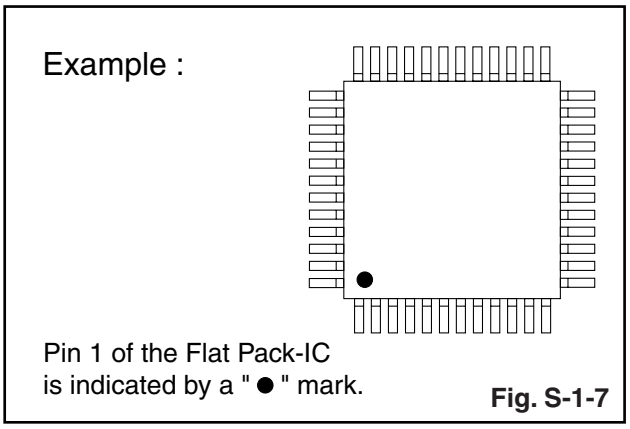


Fig. S-1-7

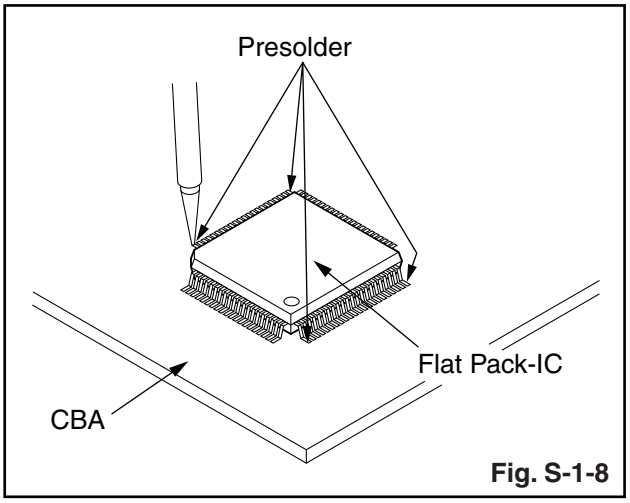


Fig. S-1-8

Instructions for Handling Semi-conductors

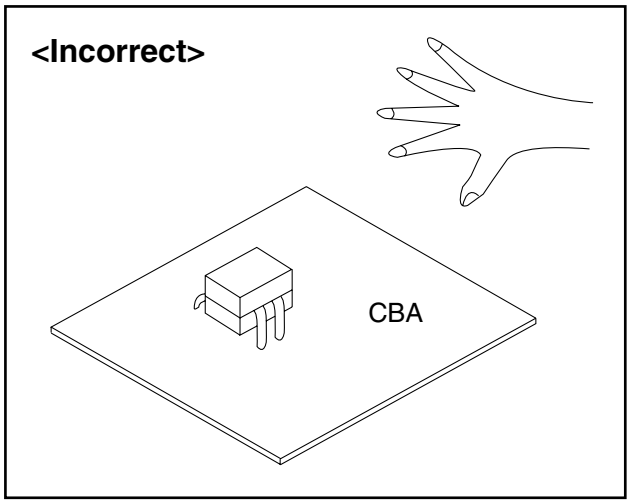
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

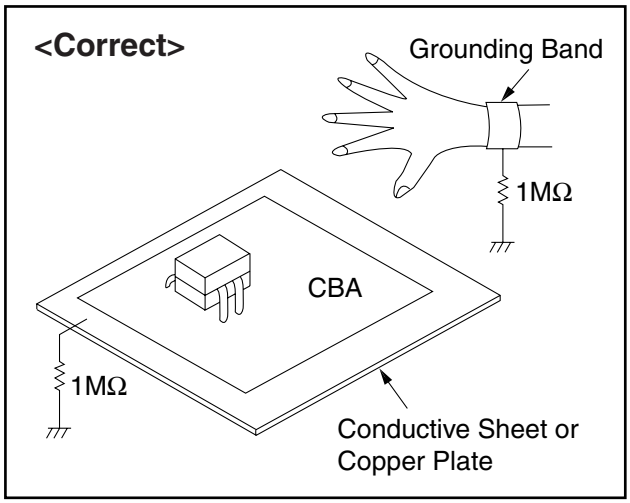
1. Ground for Human Body

Be sure to wear a grounding band (1 MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1 MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.





PREPARATION FOR SERVICING

How to Enter the Service Mode

About Optical Sensors

Caution:

An optical sensor system is used for the Tape Start and End Sensors on this equipment. Carefully read and follow the instructions below. Otherwise the unit may operate erratically.

What to do for preparation

Insert a tape into the Deck Mechanism Assembly and press the PLAY button. The tape will be loaded into the Deck Mechanism Assembly. Make sure the power is on, connect TP502 (S-INH) to GND. This will stop the function of Tape Start Sensor, Tape End Sensor and Reel Sensors. (If these TPs are connected before plugging in the unit, the function of the sensors will stay valid.) See Fig. 1.

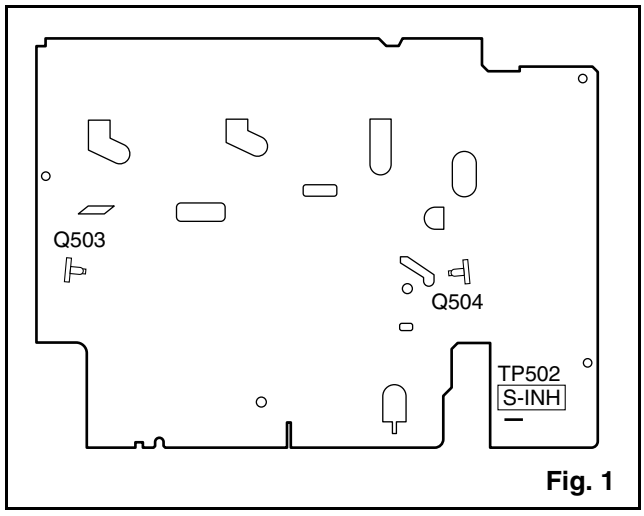


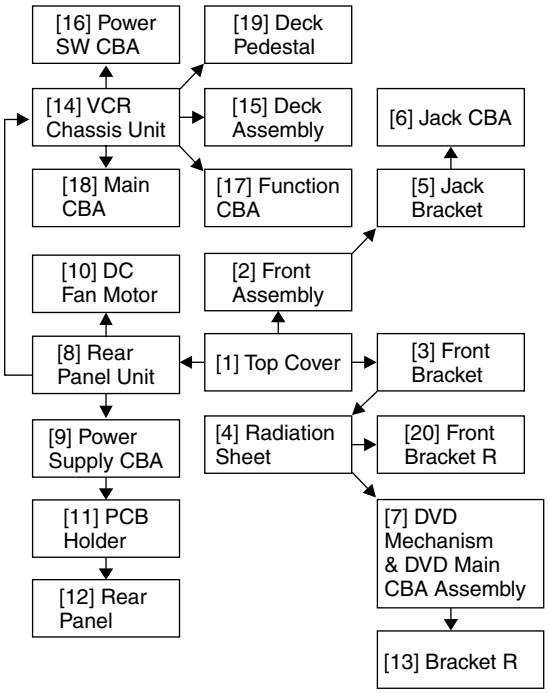
Fig. 1

Note: Because the Tape End Sensors are inactive, do not run a tape all the way to the start or the end of the tape to avoid tape damage.

CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[1]	Top Cover	D1	6(S-1)	---
[2]	Front Assembly	D2	*5(L-1), *3(L-2), *CN1609	1 1-1 1-2 1-3
[3]	Front Bracket	D2	2(S-2), (S-3), Shield Plate	---
[4]	Radiation Sheet	D2	----------	---
[5]	Jack Bracket	D3	2(S-4)	---
[6]	Jack CBA	D3	Jack Earth Plate	---
[7]	DVD Mechanism & DVD Main CBA Assembly	D4	2(S-5A), 2(S-5B), *CN2204, *CN201	---
[8]	Rear Panel Unit	D5	5(S-6), 3(S-7), (S-8), *CN101, *CN102	---
[9]	Power Supply CBA	D6	4(S-9), AC Cord	---
[10]	DC Fan Motor	D6	2(S-10), Earth Plate	---
[11]	PCB Holder	D6	3(S-11)	---
[12]	Rear Panel	D6	----------	---
[13]	Bracket R	D7	2(S-12)	---
[14]	VCR Chassis Unit	D7	5(S-13), 5(S-14), (S-15), (S-16)	---
[15]	Deck Assembly	D8	(S-17), (S-18), Desolder	2 3
[16]	Power SW CBA	D8	Desolder	---
[17]	Function CBA	D8	Desolder	---
[18]	Main CBA	D8	----------	---
[19]	Deck Pedestal	D9	8(S-19)	---
[20]	Front Bracket R	D9	(S-20)	---
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)

Note:

(1): Identification (location) No. of parts in the figures

(2): Name of the part

(3): Figure Number for reference

(4): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, L=Locking Tab, S=Screw, CN=Connector
*=Unhook, Unlock, Release, Unplug, or Desolder
e.g. 6(S-1) = six Screws (S-1),
5(L-1) = five Locking Tabs (L-1)

(5): Refer to “Reference Notes.”

Reference Notes

CAUTION 1: Locking Tabs (L-1) and (L-2) are fragile. Be careful not to break them.

1-1. Release five Locking Tabs (L-1).

1-2. Release three Locking Tabs (L-2)

1-3. Disconnect Connector (CN1609), and remove the Front Assembly.

2. When reassembling, solder wire jumpers as shown in Fig. D8.

3. Before installing the Deck Assembly, be sure to place the pin of LD-SW on Main CBA as shown in Fig. D8. Then, install the Deck Assembly while aligning the hole of Cam Gear with the pin of LD-SW, the shaft of Cam Gear with the hole of LD-SW as shown in Fig. D8.

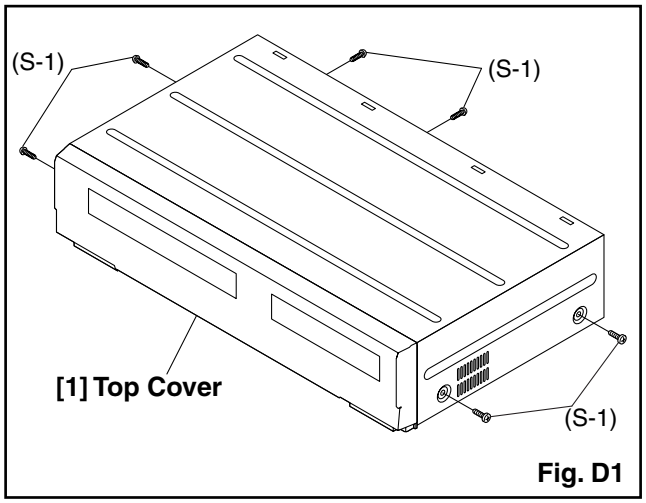


Fig. D1

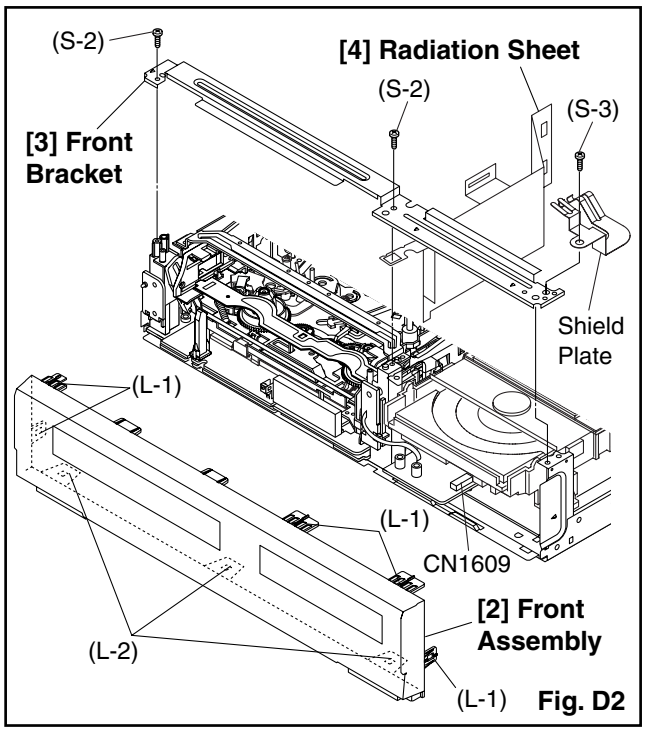


Fig. D2

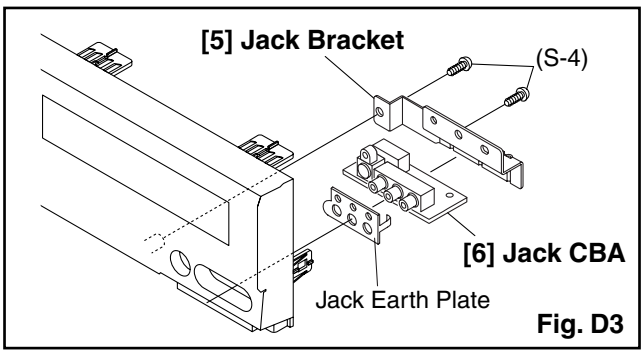


Fig. D3

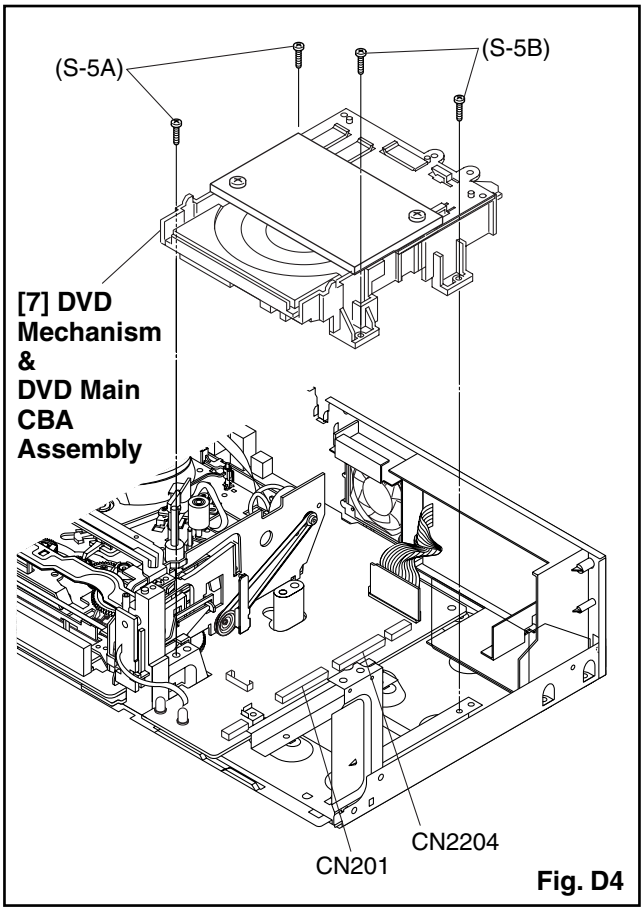


Fig. D4

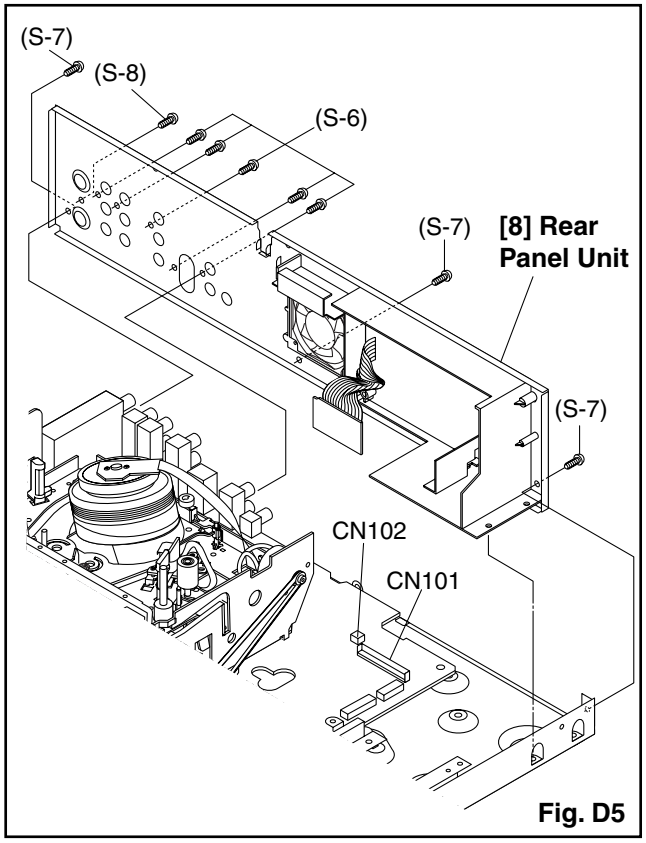


Fig. D5

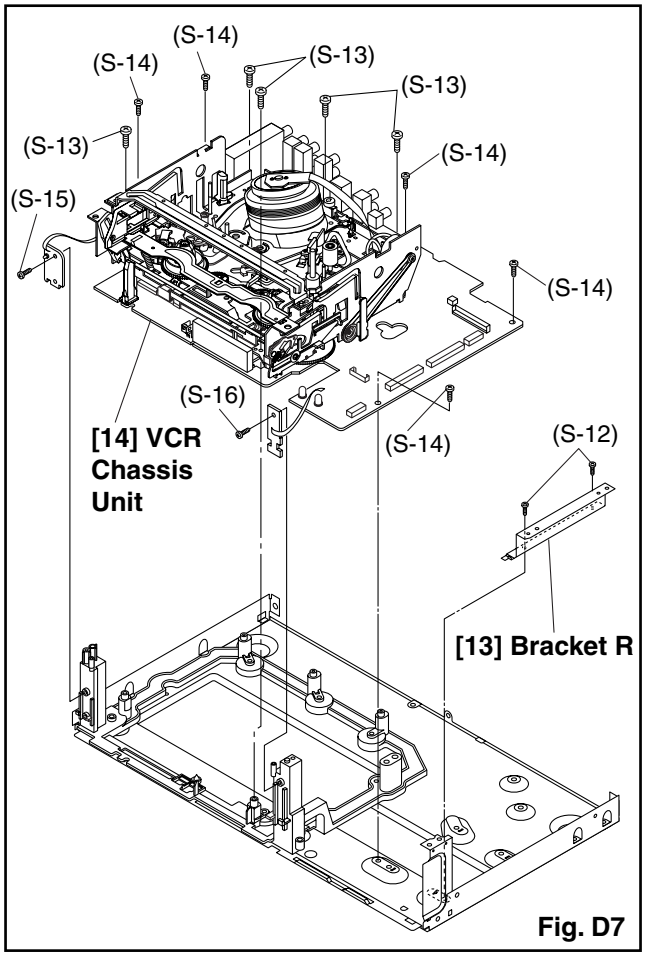


Fig. D7

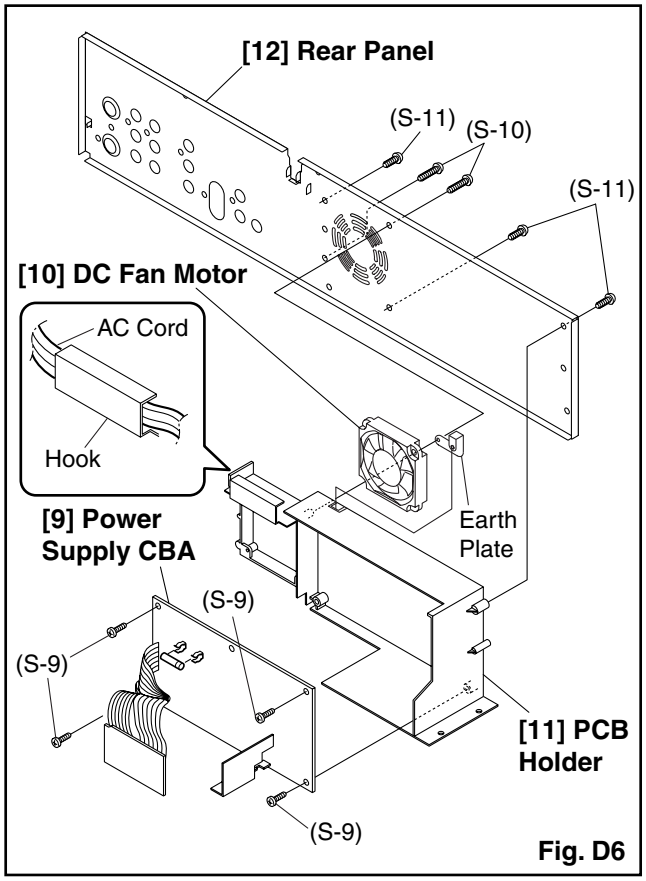
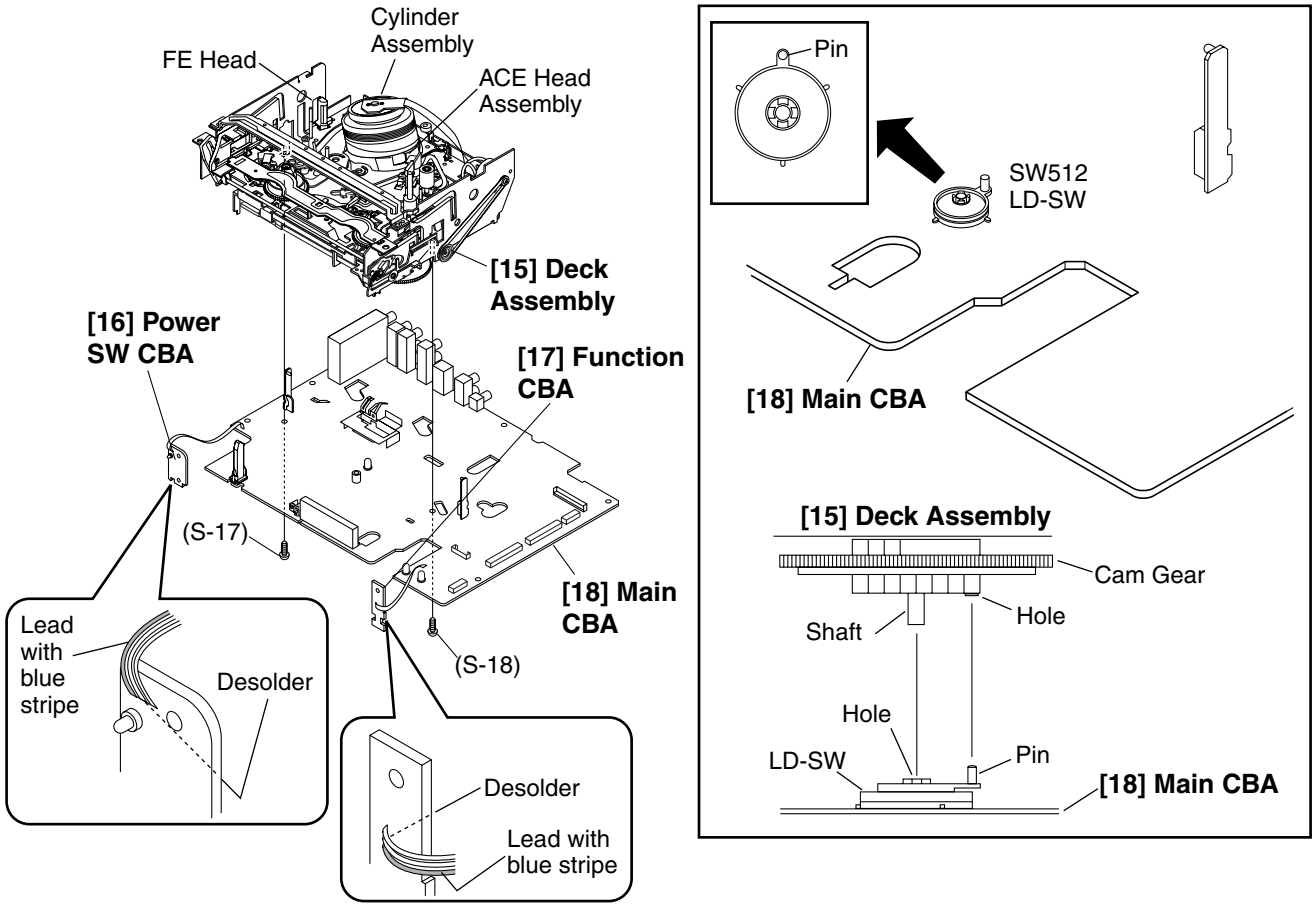
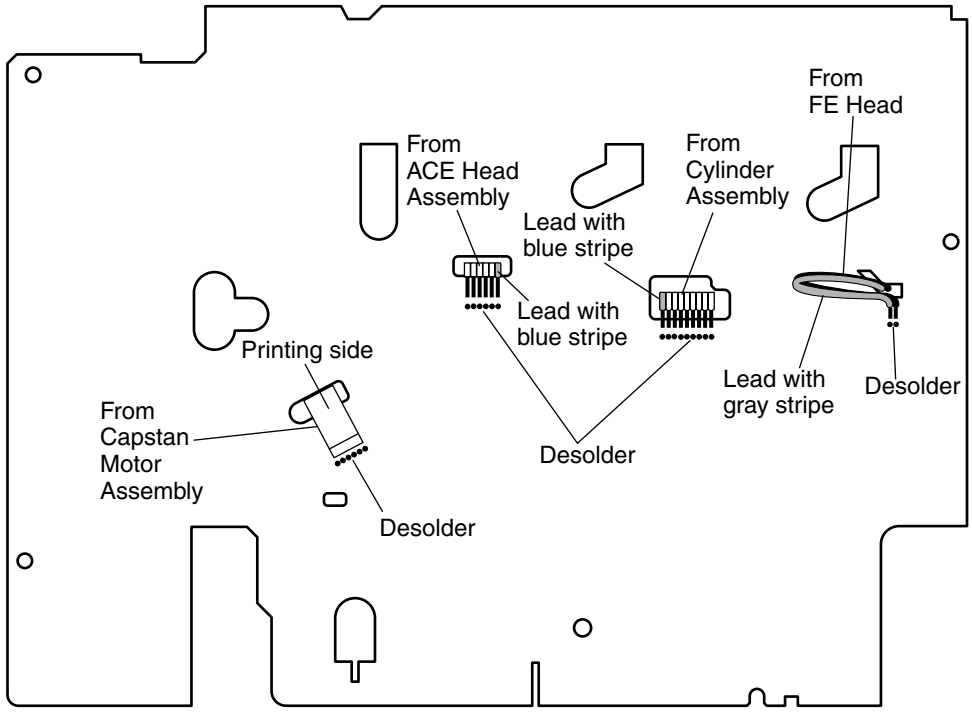


Fig. D6





BOTTOM VIEW

Lead connections of Deck Assembly and Main CBA

Fig. D8

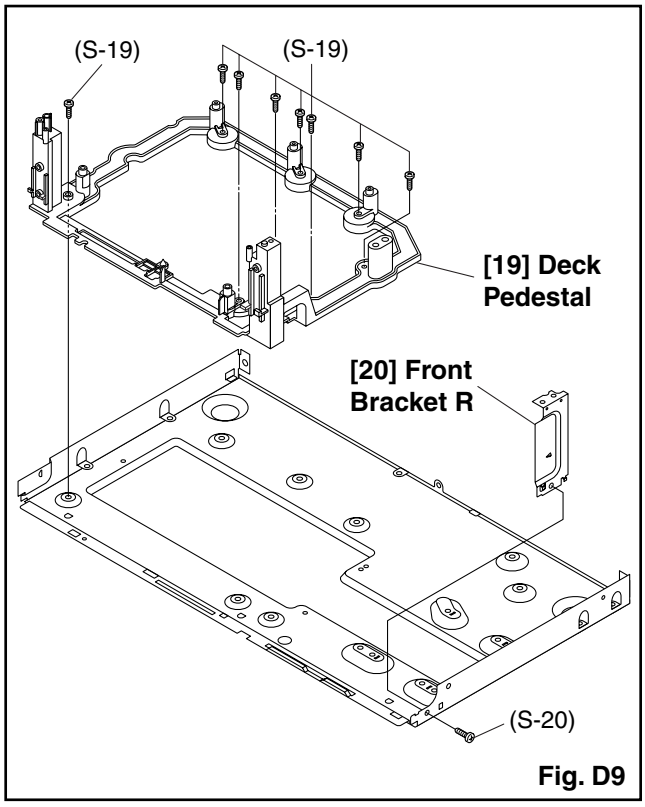


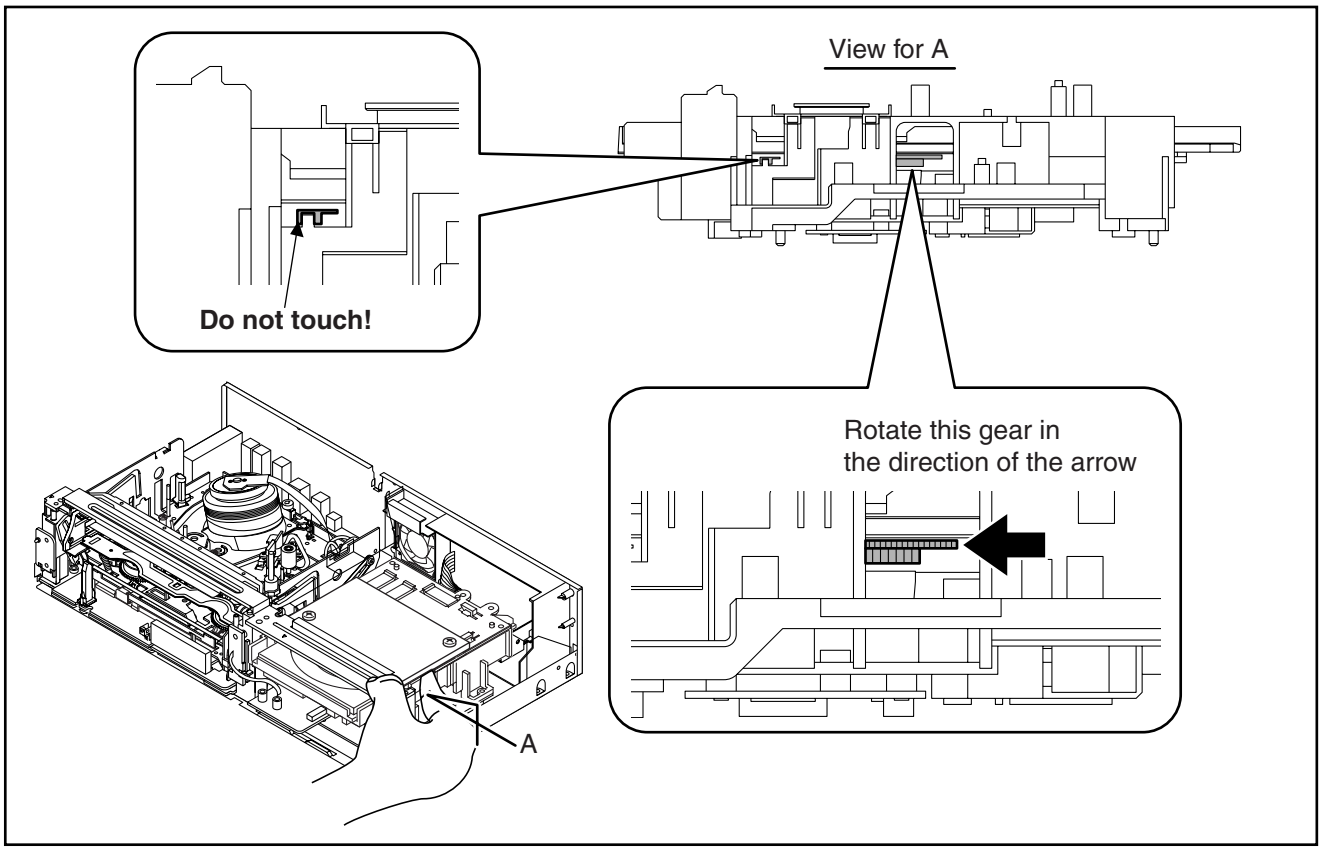
Fig. D9

3. How to Eject Manually

< Method 1 >

Note: When servicing, do not touch white resin part as shown below.
When rotating the gear, be not damaged with the gear.

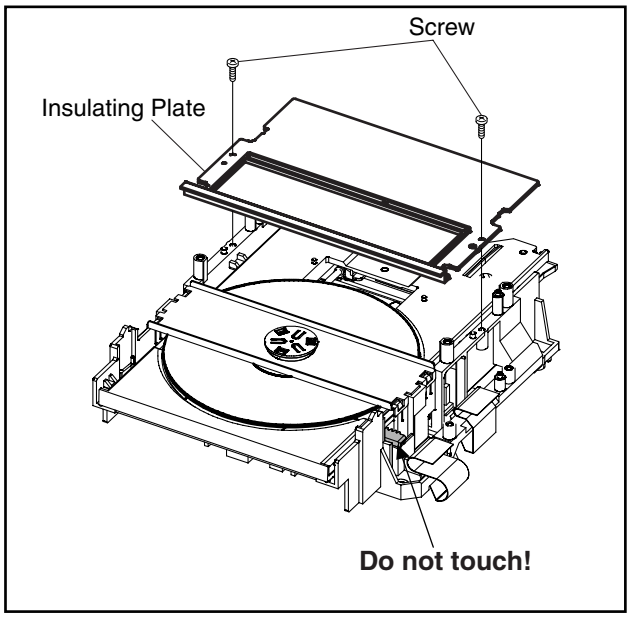
1. Remove the Top Cover.
2. Rotate the gear in the direction of the arrow with a hand as shown below.



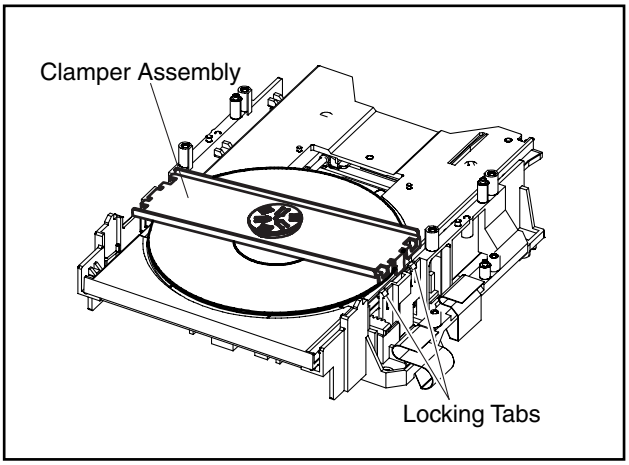
< Method 2 >

Note: When servicing, do not touch white resin part as shown below.

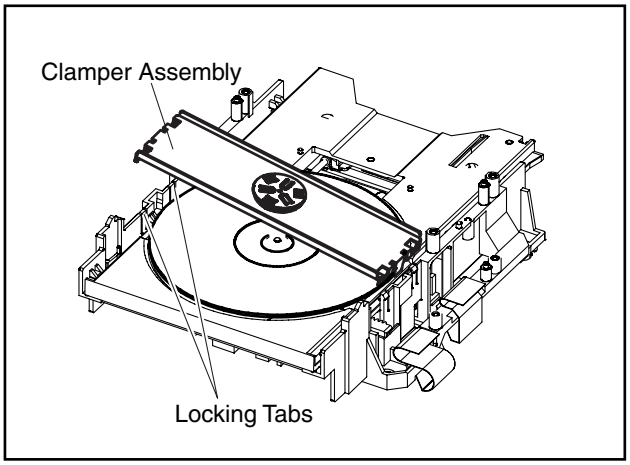
1. Remove the Top Cover, the Front Assembly and the DVD Mechanism & DVD Main Assembly. Then, remove the DVD Mechanism Unit.
2. Remove two screws, and remove the Insulating Plate.



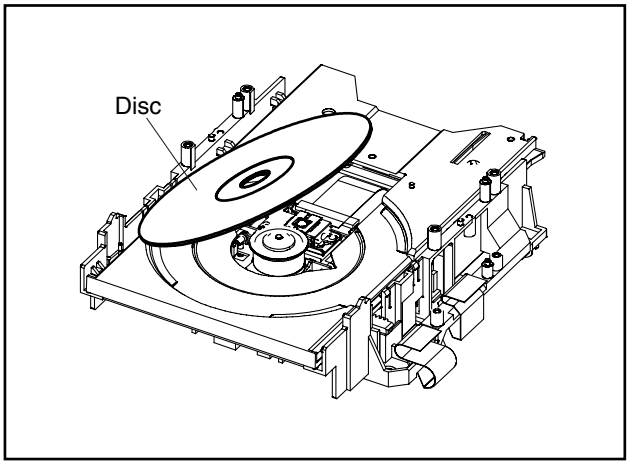
3. Release two Locking Tabs, and lift up one side of the Clamper Assembly.



4. Release two Locking Tabs, and remove the Clamper Assembly.



5. Remove the disc.



ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note: "CBA" is abbreviation for "Circuit Board Assembly."

NOTE:

1. Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to do these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.
2. To perform these alignment / confirmation procedures, make sure that the tracking control is set in the center position: Press either [CHANNEL ▼] or [CHANNEL ▲] button on the front panel first, then the [PLAY] button on the front panel.

Test Equipment Required

1. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50 V/Div.,
   F-Range: DC~AC-20 MHz
2. Alignment Tape (FL8A)

Head Switching Position Adjustment

Purpose: To determine the Head Switching position during playback.

Symptom of Misadjustment: May cause Head Switching noise or vertical jitter in the picture.

Test point	Adj. Point	Mode	Input
TP751(V-OUT) TP302(RF-SW) GND	VR501 (Switching Point)	PLAY (SP)	-----
Tape	**Measurement Equipment**	**Spec.**	
FL8A	Oscilloscope	6.5H ± 1H (412.7µs±63.5µs)	

Connections of Measurement Equipment

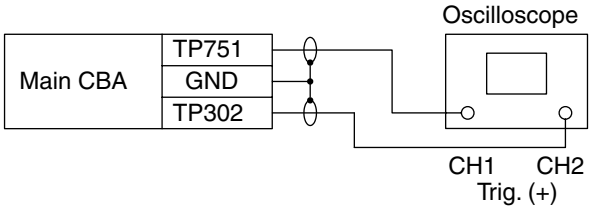
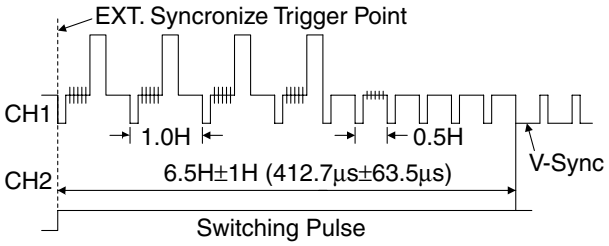


Figure 1



Note: TP751(V-OUT), TP302(RF-SW), VR501(Switching Point) --- Main CBA

Reference Notes:

Playback the Alignment tape and adjust VR501 so that the V-sync front edge of the CH1 video output waveform is at the 6.5H ± 1H (412.7 µs ± 63.5 µs) delayed position from the rising edge of the CH2 head switching pulse waveform.

HOW TO INITIALIZE THE DVD RECORDER & VCR

To put the program back at the factory-default, initialize the DVD recorder & VCR as the following procedure.

< DVD Recorder Section >

1. Turn the DVD recorder on.
2. Confirm that no disc is loaded or that the disc tray is open. To put the DVD recorder into the Version display mode, press [DVD], [CM SKIP], [1], [2], and [3] buttons on the remote control in the order. Fig. a appears on the screen.

*1: "*******" differ depending on the models.
*2: Firmware Version differ depending on the models, and indication is one example.

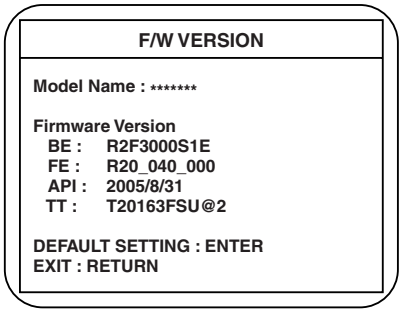


Fig. a Version Display Mode Screen

3. Press [ENTER] button, then the DVD recorder starts initializing. When the initializing is completed, the DVD recorder exits the Version display mode and turns off the power automatically.
   * To move into the Normal mode from the Version display mode, press [RETURN] button on the remote control instead of [ENTER] button.
   * When [POWER] button is pressed before [ENTER] button is pressed, the DVD recorder exits the Version display mode, then the power turns off.

FIRMWARE RENEWAL MODE

1. Turn the power on and remove the disc on the tray.
2. To put the DVD recorder into version up mode, press [DVD], [CM SKIP], [6], [5], and [4] buttons on the remote control unit in the order. The tray will open automatically.
   Fig. a appears on the screen and Fig. b appears on the VFD.

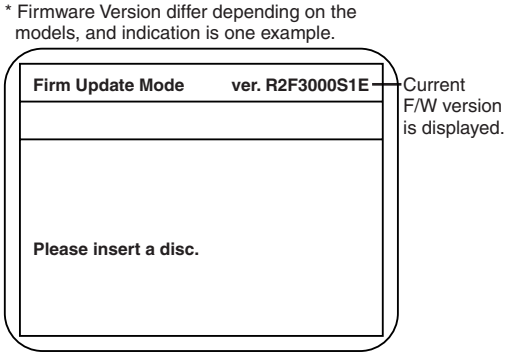

* Firmware Version differ depending on the models, and indication is one example.
Firm Update Mode ver. R2F3000S1E
Current F/W version is displayed.
Please insert a disc.

Fig. a Version Up Mode Screen

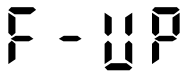


Fig. b VFD in Version Up Mode

3. Load the disc for version up.
   Fig. c appears on the screen. The file on the top is highlighted as the default.
   When there is only one file to exist, Step 4 will start automatically.

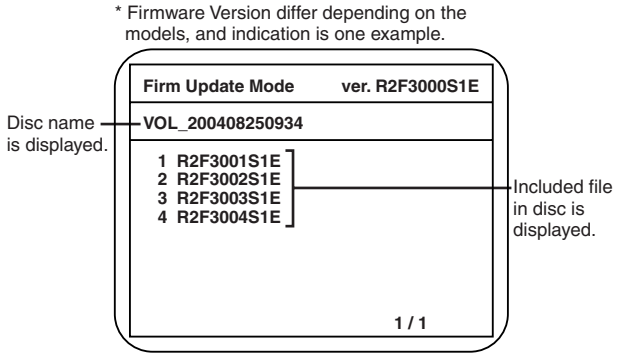

* Firmware Version differ depending on the models, and indication is one example.
Firm Update Mode ver. R2F3000S1E
Disc name is displayed.
VOL_200408250934
1 R2F3001S1E
2 R2F3002S1E
3 R2F3003S1E
4 R2F3004S1E
Included file in disc is displayed.
1 / 1

Fig. c Update Disc Screen

4. Select the firmware version using arrow buttons, then press [ENTER].
   Fig. d appears on the screen and Fig. e appears on the VFD. The DVD recorder starts updating.

   About VFD indication of Fig. e:

   1) When Fig. d is displayed on the screen, “F-UP” is displayed on the VFD.
   2) When “Firmware Updating... XX% Complete.” is displayed on the screen, “XX%” is displayed on the VFD.

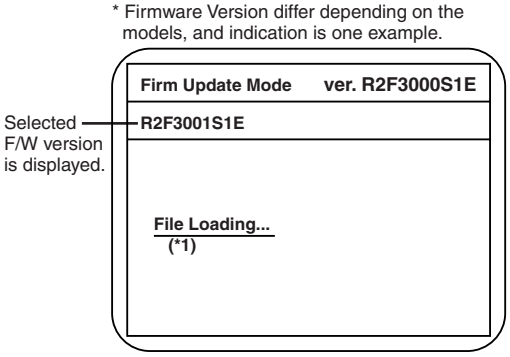

* Firmware Version differ depending on the models, and indication is one example.
Firm Update Mode ver. R2F3000S1E
Selected F/W version is displayed.
R2F3001S1E
File Loading...
(*1)

Fig. d Programming Mode Screen

Fig. e VFD in Programming Mode (Example)

The appearance shown in (*1) of Fig. d is described as follows.

No.	Appearance	State
1	File Loading...	Sending files into the memory
2	Firmware Updating... XX% Complete.	Writing new version data
---	Firmware Update Failure	Failed in updating

5. After updating is finished, the tray opens automatically.
   Fig. f appears on the screen and Fig. g appears on the VFD.

* Firmware Version differ depending on the models, and indication is one example.

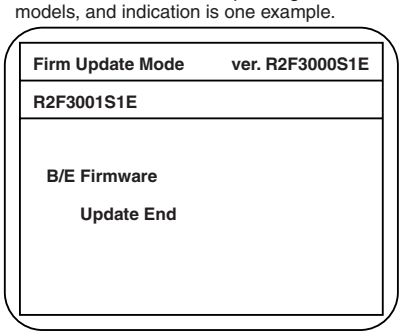


Fig. f Completed Program Mode Screen

Fig. g VFD in Completed Program Mode

   At this time, no buttons are available.

6. Press [POWER] button to turn the power off. Then press it again.

FUNCTION INDICATOR SYMBOLS

< VCR Section >

Note:

If a mechanical malfunction occurs, the power is turned off. When the power comes on again after that by pressing [POWER] button, an error message is displayed on the TV screen for 5 seconds.

Led Mode	Indicator Active
When reel or capstan mechanism is not functioning correctly	"⏏ R" is displayed on a TV screen. (Refer to Fig. 1.)
When tape loading mechanism is not functioning correctly	"⏏ T" is displayed on a TV screen. (Refer to Fig. 2.)
When cassette loading mechanism is not functioning correctly	"⏏ C" is displayed on a TV screen. (Refer to Fig. 3.)
When the drum is not working properly	"⏏ D" is displayed on a TV screen. (Refer to Fig. 4.)
P-ON+5V Power safety detection	"⏏ P" is displayed on a TV screen. (Refer to Fig. 5.)

TV screen

When reel or capstan mechanism is not functioning correctly

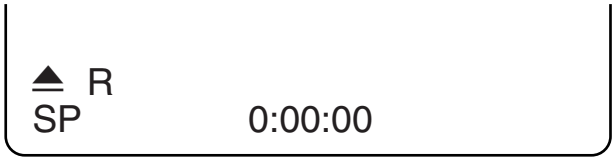


Fig. 1

When tape loading mechanism is not functioning correctly

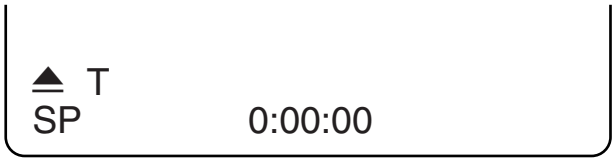


Fig. 2

When cassette loading mechanism is not functioning correctly

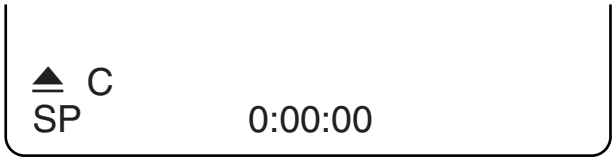


Fig. 3

When the drum is not working properly

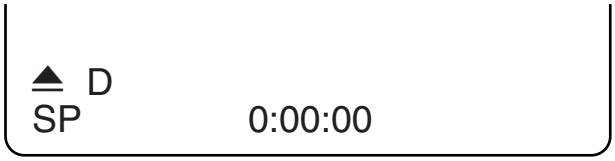


Fig. 4

P-ON+5V Power safety detection

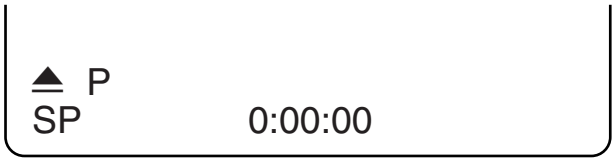
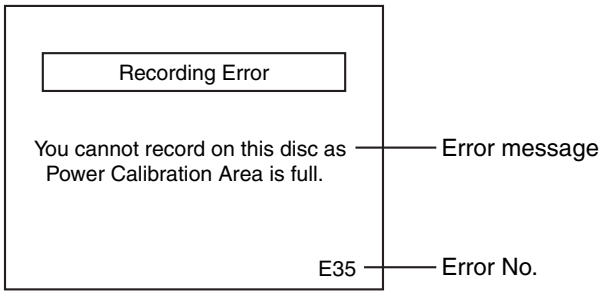


Fig. 5

< DVD Section >

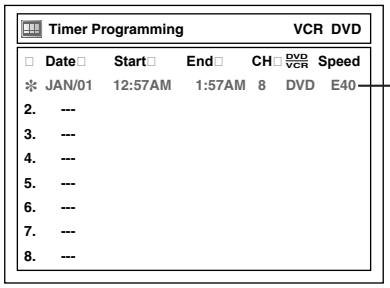
Note: If an error occurs, a message with the error number appears on the screen.



Message	Solution	Error No.	Error Description	Priority
Can not record on this disc.	Insert the recordable disc, and ensure the disc status satisfies the recording requirements.	1	An error occurs during data reading.	-
		2	There is no reply for 15 seconds in Test Unit Ready.	-
		3	Cannot write the data after trying to write three times.	-
		4	An error occurs with OPC.	-
		5	During recovery in a record.	-
		6	An error occurs even if it do recovery of a record three times.	-
		7	An error occurs in a format.	-
		8	It cannot start an encode.	-
		9	There is not NV_PCK/RDI_PCK in data doing an encode.	-
		10	Encode Pause condition continued for 10 minutes.	-
		11	Encode Pause condition continued by normal REC condition for 10 minutes.	-
		12	Differ in an address and do not get StreamID of RDI/VIDEO.	-
		13	It is a reply that “ATAPI is not readable.”	-
		14	Cannot write the data after recovering SMALL VMGI.	-
		15	Cannot write the data after DVD-R Reverse Track.	-
		16	An error occurs in Finalize Close.	-
		17	An error occurs in Rec Stop Close.	-
		18	An error occurs in PCA Full (DVD_R).	-
		19	Safety Stop occurs during editing.	-
		20	High Speed Disc.	2
		21	The disc which is not formatted.	5
		22	The disc that Disc Error occurred.	3
		23	The -R Disc of VR Mode.	6
		24	The disc except DVD-R/RW or DVD-R finalized disc	1
This program is not allowed to be recorded.	You cannot record copy prohibited programs.	25	During the Macrovision picture input.	11
		26	During the CGMS picture input.	12
This program is not recordable in Video mode.	Set “DVD-RW Recording Format” to “VR mode”.	27	During the CGMS picture (possible a record once) input. (Video Format Disc)	12

Message	Solution	Error No.	Error Description	Priority
This program is not allowed to be recorded on this disc.	Insert a ver.1.1 CPRM compatible DVD-RW disc.	28	During the CGMS picture (possible a record once) input. (Disc which there is not for the correspondence to VR Format CPRM)	12
This disc is protected and not recordable.	Release the disc protect setting in the Disc Setting menu.	29	Disc Protected Disc.	7
Disc is full. (No area for new recording)	Insert the recordable disc with enough recording space.	30	There is no it in a space field.	5
You cannot record more than 99 titles on one disc. (The maximum is 99.)	Delete unnecessary titles.	31	It is recorded a 99 title. (Video Format Disc)	7
		32	It is recorded a 99 title. (VR Format Disc)	8
You cannot record more than 999 chapters on one disc. (The maximum is 999.)	Delete unnecessary chapter markers.	33	There is 999 number of total chapter. (VR Format Disc)	9
You cannot record on this disc as Control Information is full.	Delete unnecessary titles.	34	There is not a space to a record field of control information.	10
You cannot record on the disc as Power Calibration Area is full.	Insert a new disc.	35	PCA Full. (in REC start)	4
This disc is already finalized.	Release the finalizing for this disc.	36	It is done Finalize. (Video Format Disc)	6
Can not record on this disc.	Repeat the same operation.	37	Access to Memory Area range outside.	-
		38	Sector Address is wrong.	-
		39	BUP writing error of chapter editing.	-

If an error occurs during the timer recording, one of the following error numbers (40 to 42) or the above error messages (error number: 1 to 39) is displayed on the recording menu after timer recording.
(Once the timer programming list with error indication is displayed, the program line(s) with error will be cleared only after the programs are cancelled and reset to the timer standby mode.)
(In the case of the error occurs during setting the timer programming, no error messages is displayed.)

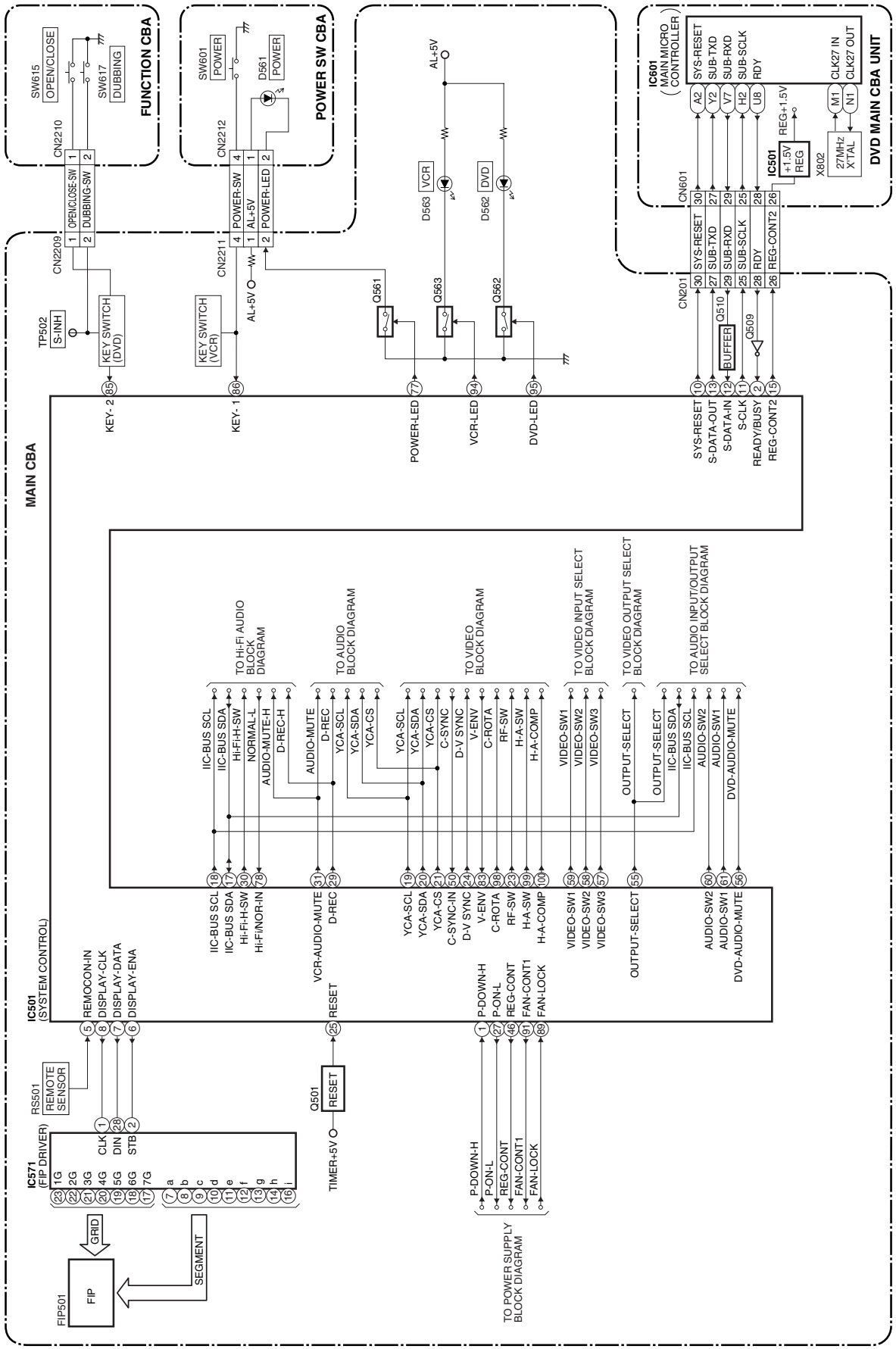


A program with the error number is grayed out and asterisked on the timer programming list.

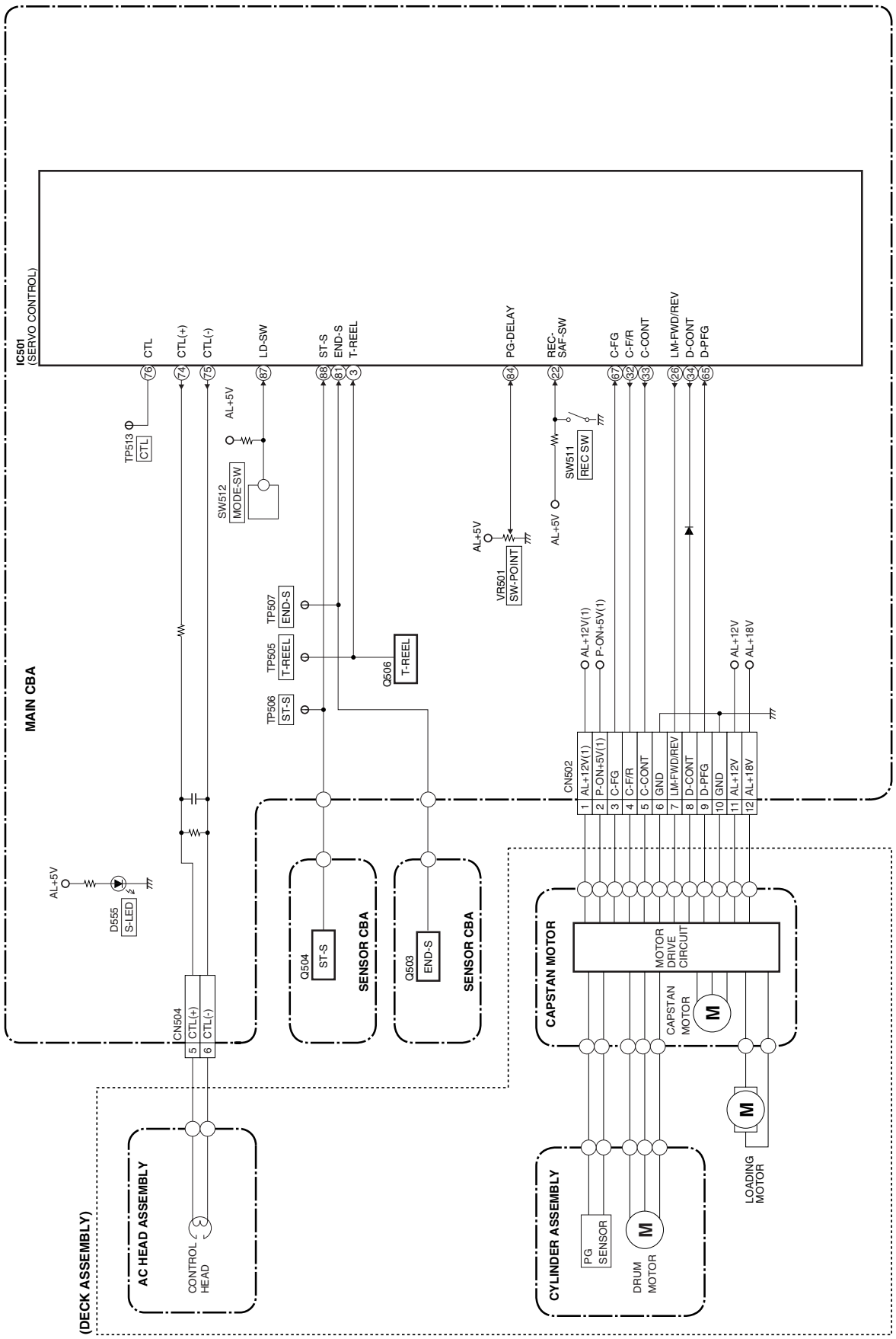
Message	Solution	Error No.	Error Description	Priority
Error message is not displayed.	- Set the timer programming correctly. - Set the timer programming before the start time. - Insert a recordable videotape with a record tab.	40	- Some portion has not been recorded because of program overlapping. - Recording did not start at the start time. - No Videotape is inserted. Videotape ran out during recording.	-
	Turn the power on and set the clock correctly then set timer programming again.	41	Power failed	-
	Insert the recordable disc.	42	No disc when recording	-

BLOCK DIAGRAMS

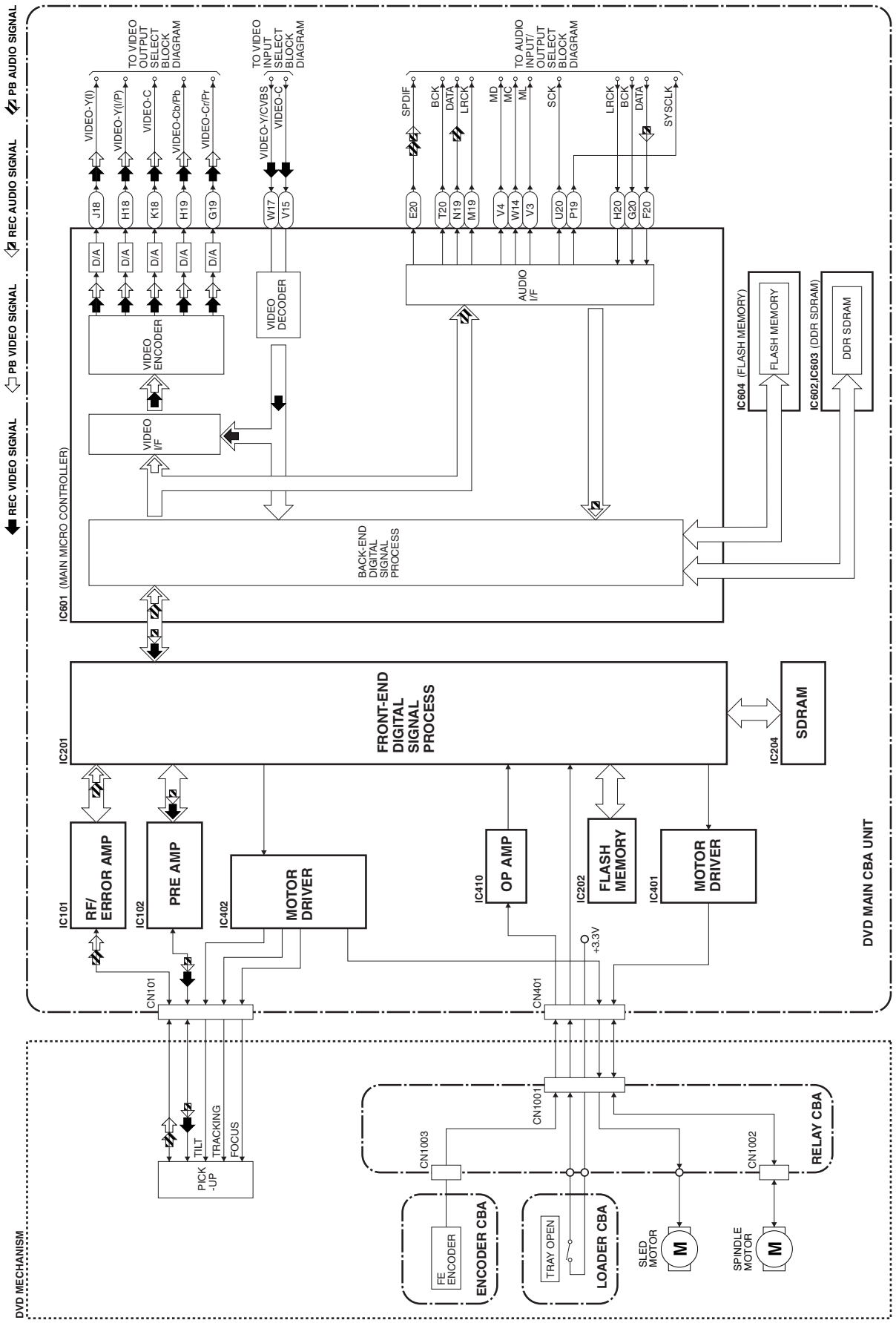
System Control Block Diagram



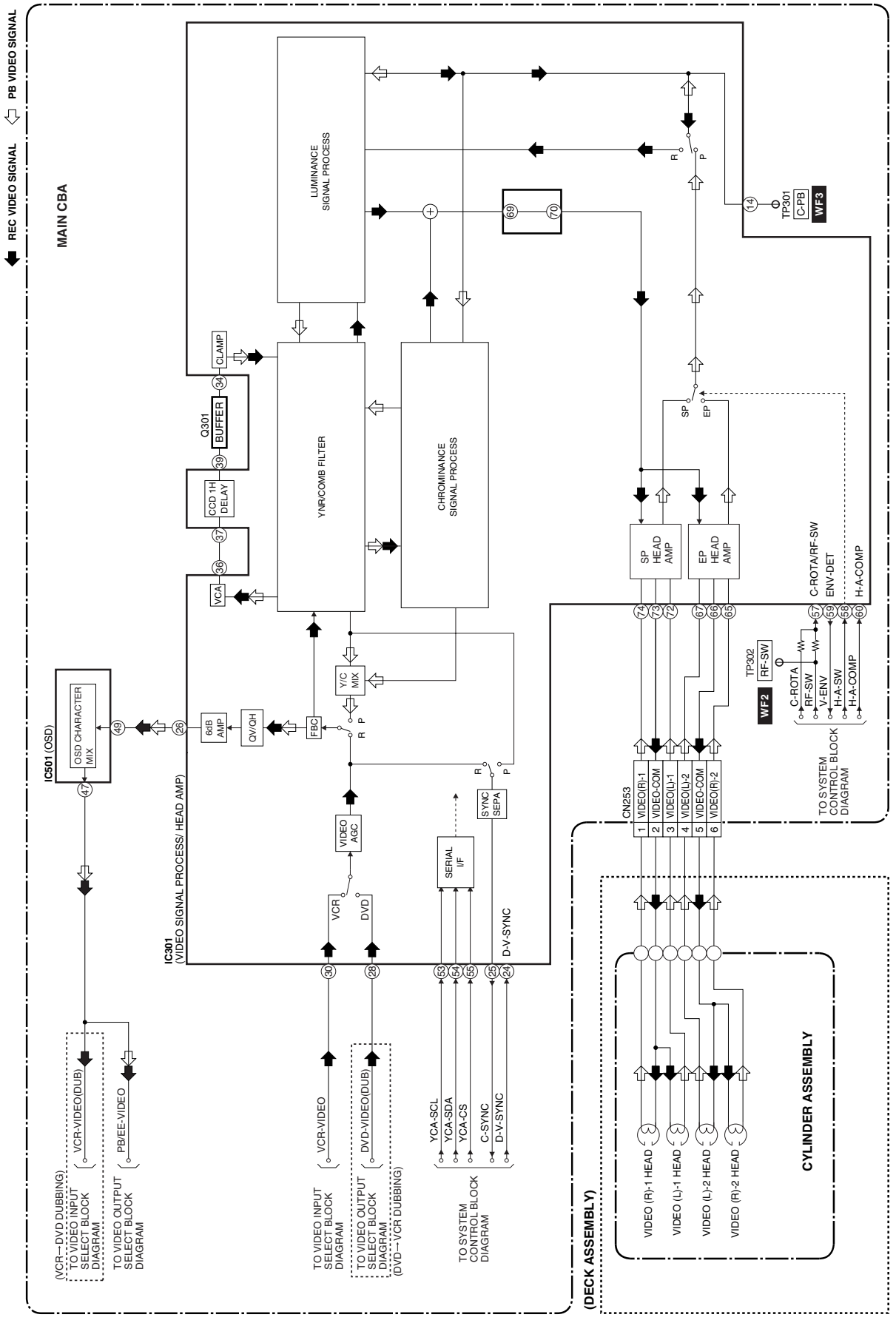
Servo Block Diagram



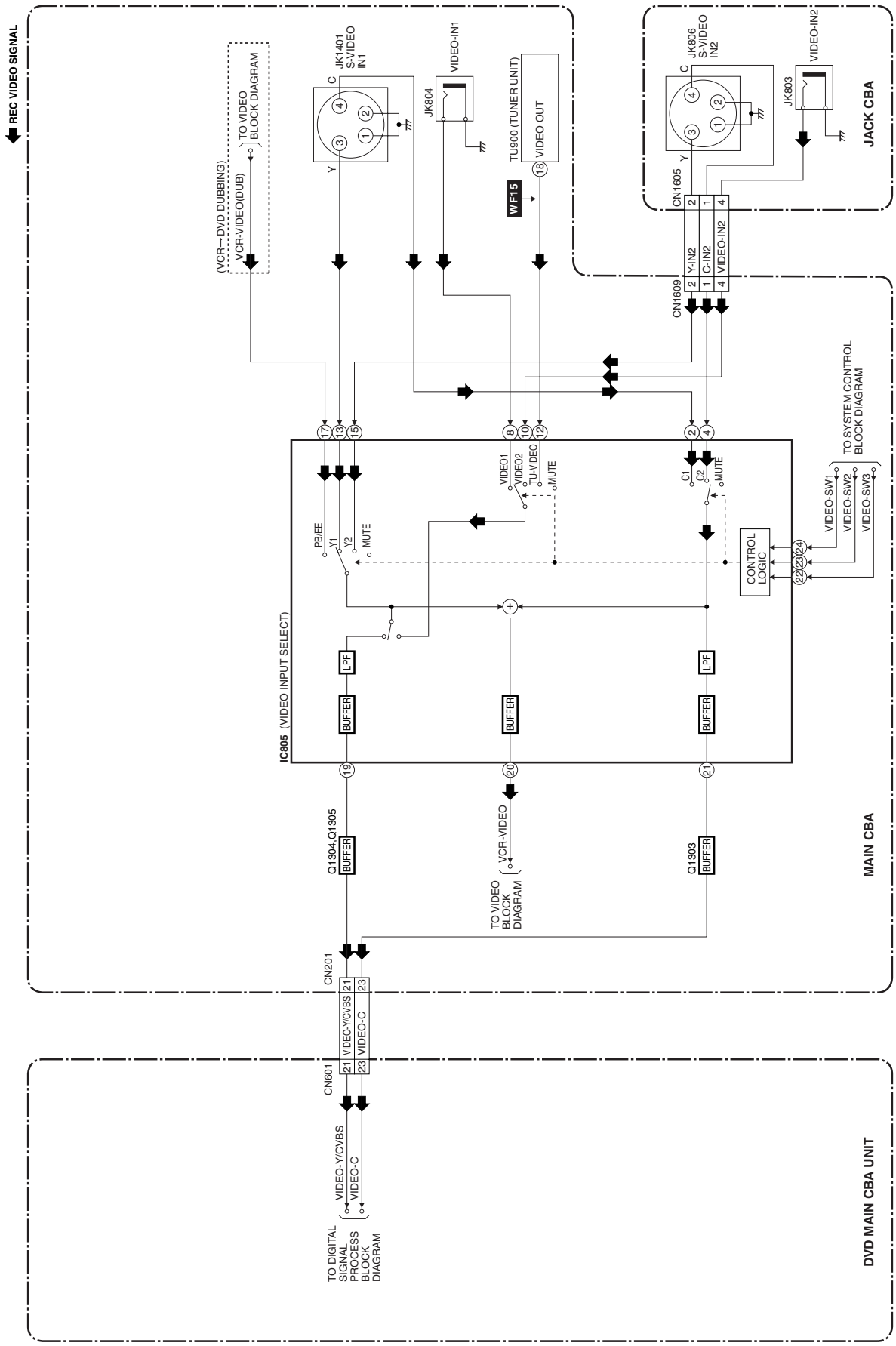
Digital Signal Process Block Diagram



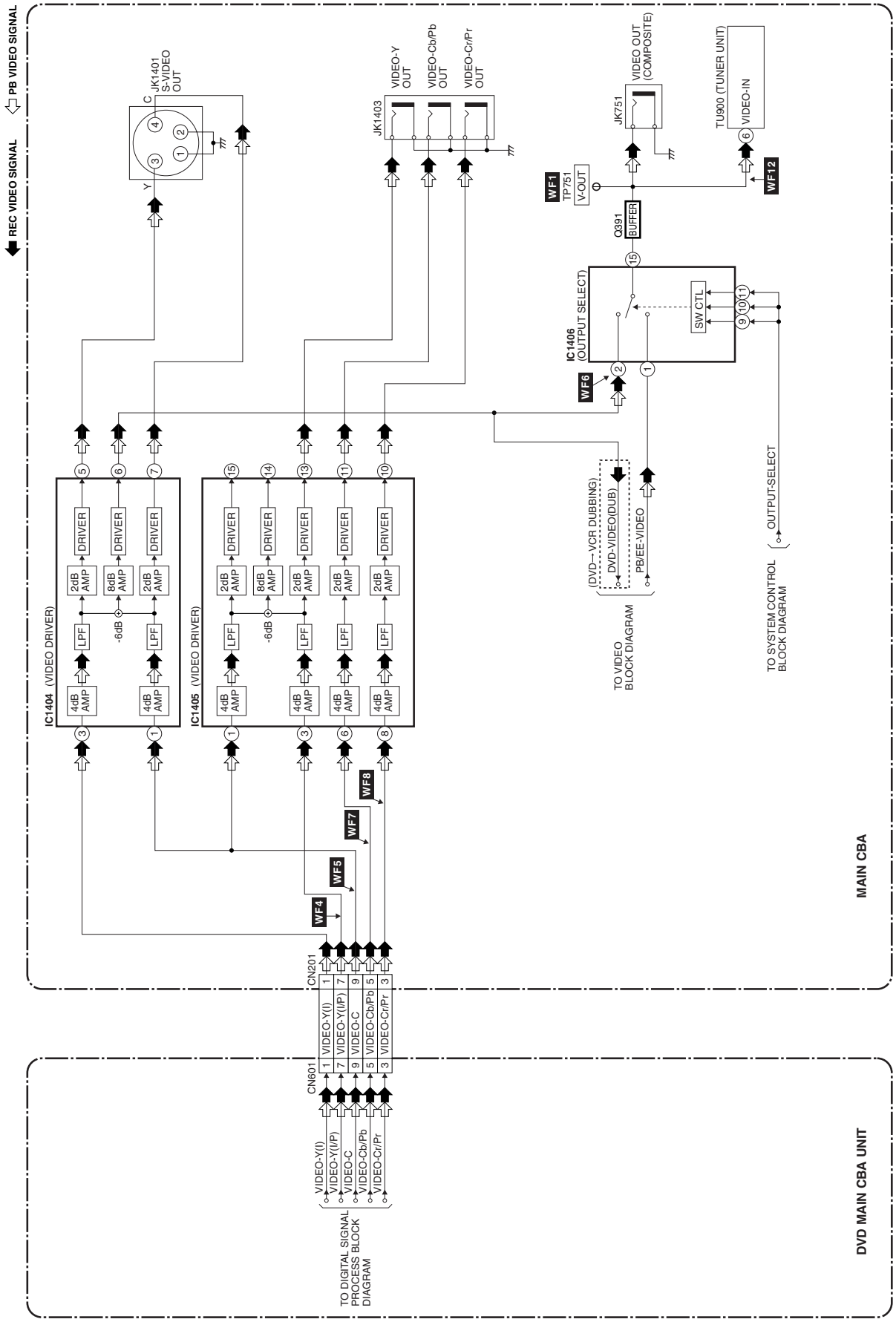
Video Block Diagram



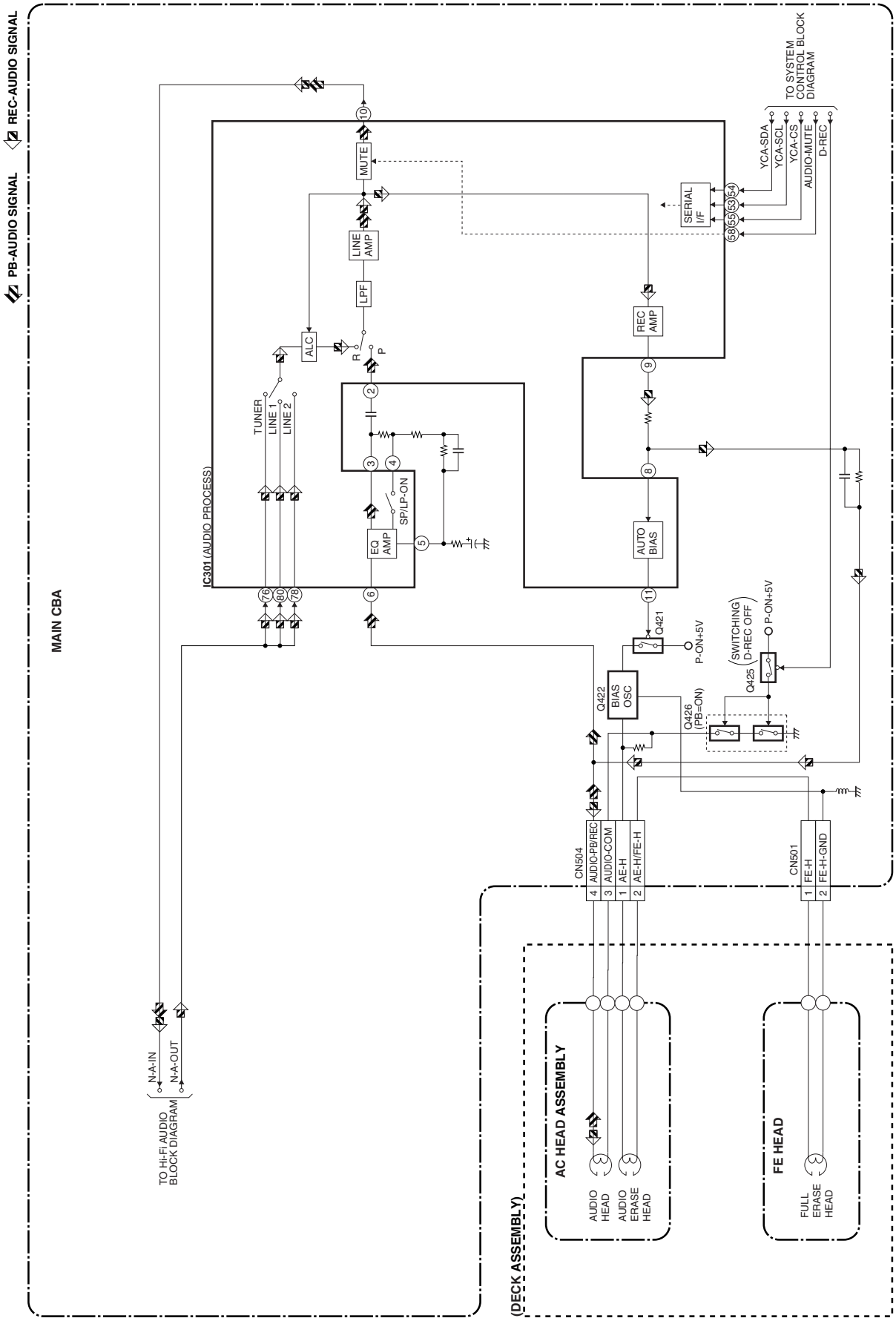
Video Input Select Block Diagram



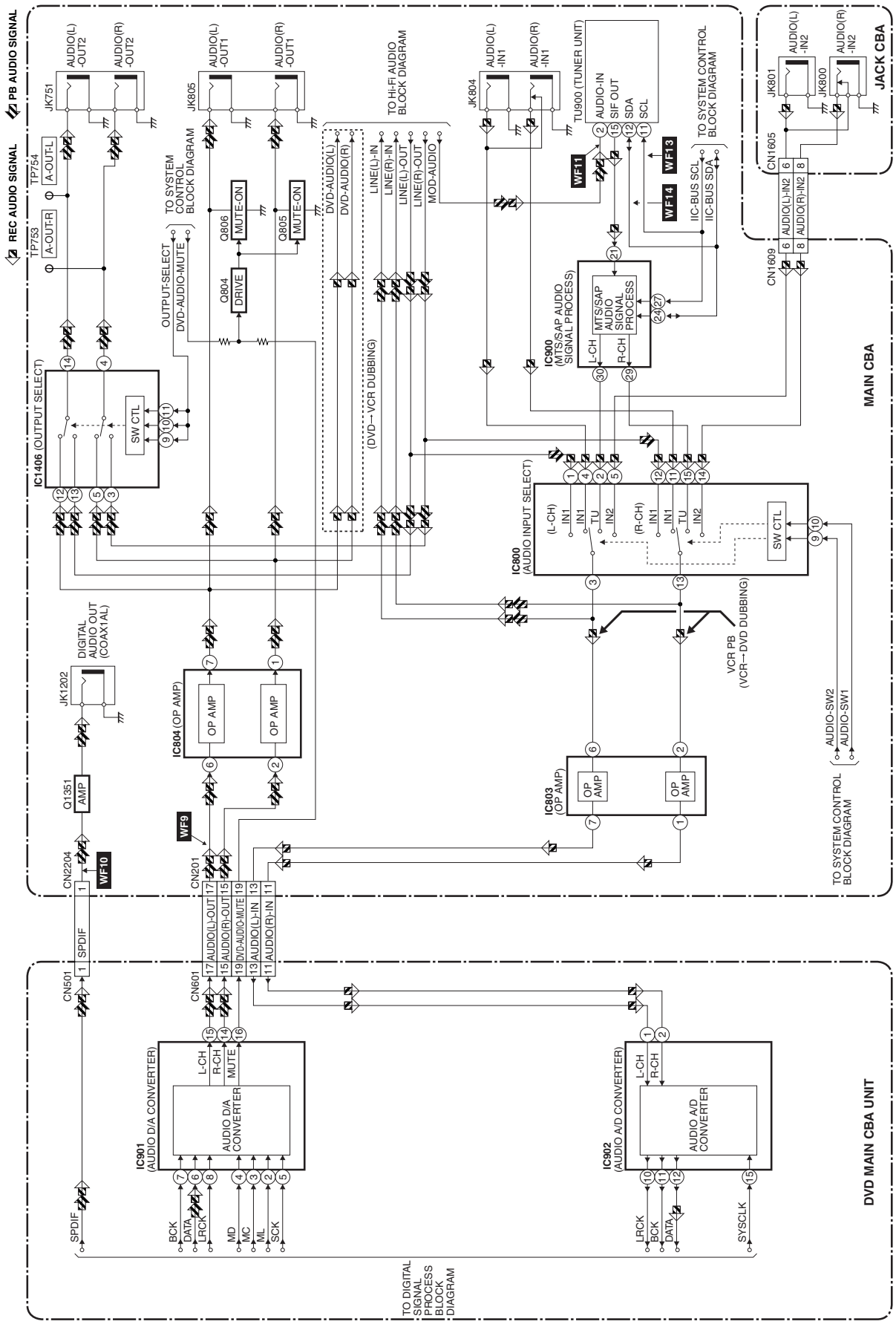
Video Output Select Block Diagram



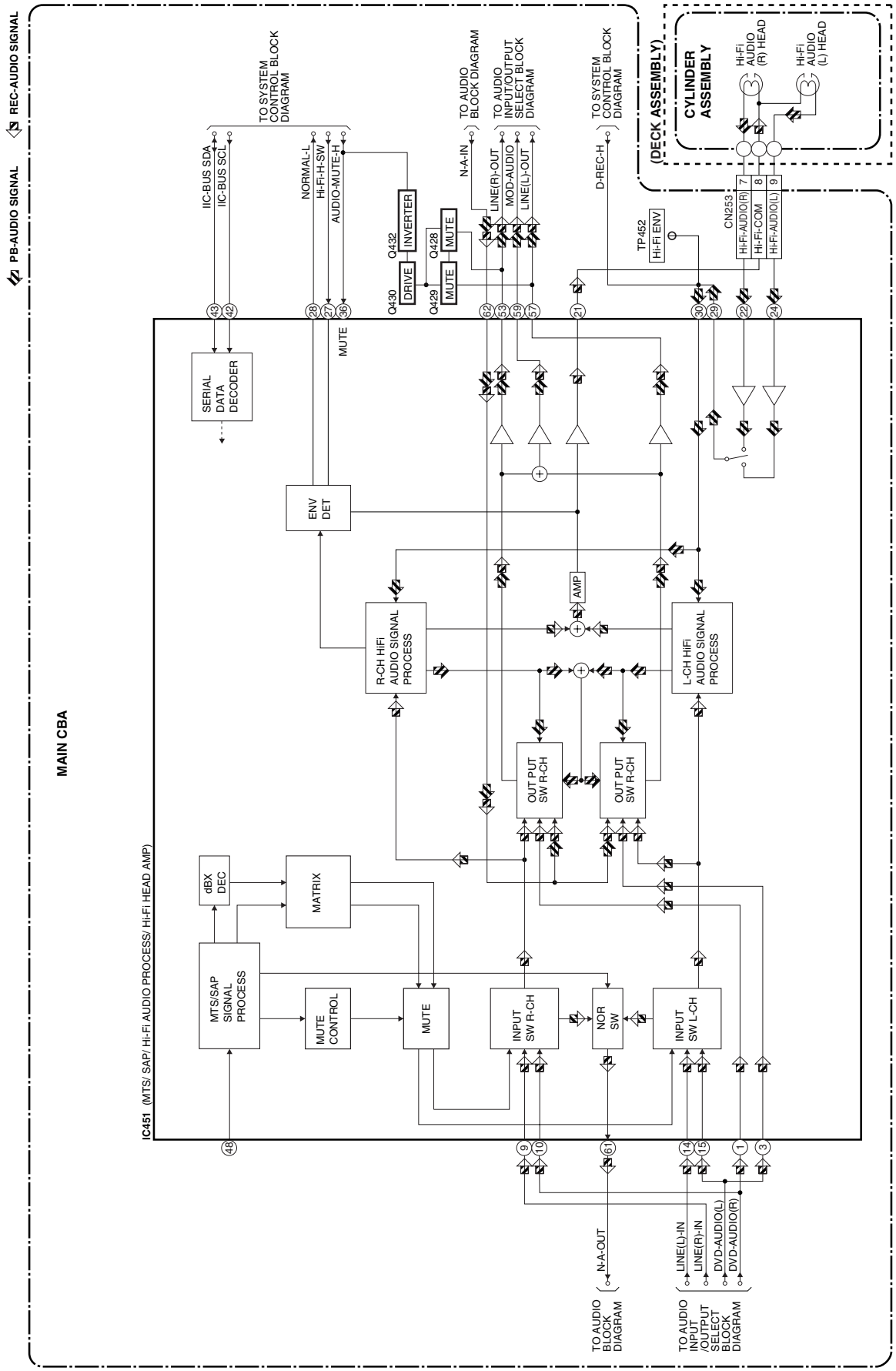
Audio Block Diagram



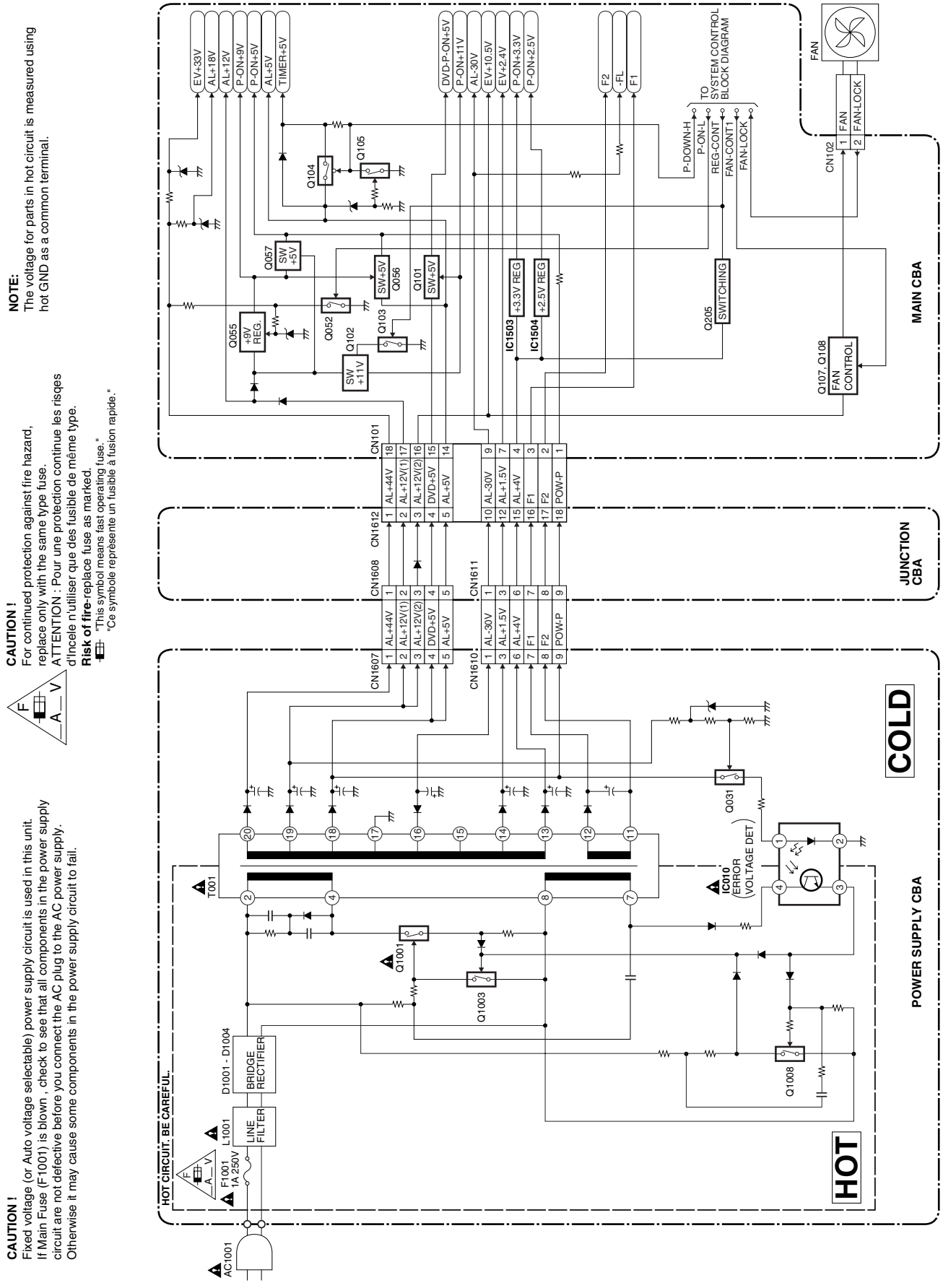
Audio Input/Output Select Block Diagram



Hi-Fi Audio Block Diagram



Power Supply Block Diagram



SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

WARNING

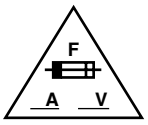
Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark "⚠" in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K = 10^3$, $M = 10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P = 10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.

LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:



FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

This symbol means fast operating fuse.
Ce symbole reprèsente un fusible à fusion rapide.

2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

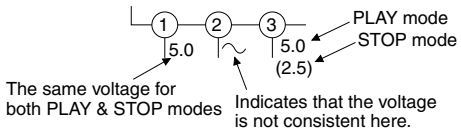
3. Note:

1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

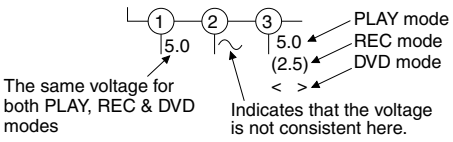
4. Mode: SP/REC

5. Voltage indications for PLAY and REC modes on the schematics are as shown below:

< DVD Section >



< VCR Section >

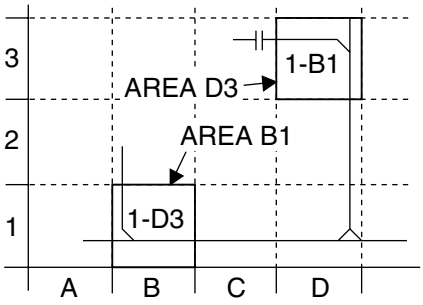


Unit: Volts

6. How to read converged lines

1-D3
- Distinction Area
- Line Number (1 to 3 digits)

Examples:
1. "1-D3" means that line number "1" goes to the line number "1" of the area "D3".
2. "1-B1" means that line number "1" goes to the line number "1" of the area "B1".



7. Test Point Information

: Indicates a test point with a jumper wire across a hole in the PCB.

: Used to indicate a test point with a component lead on foil side.

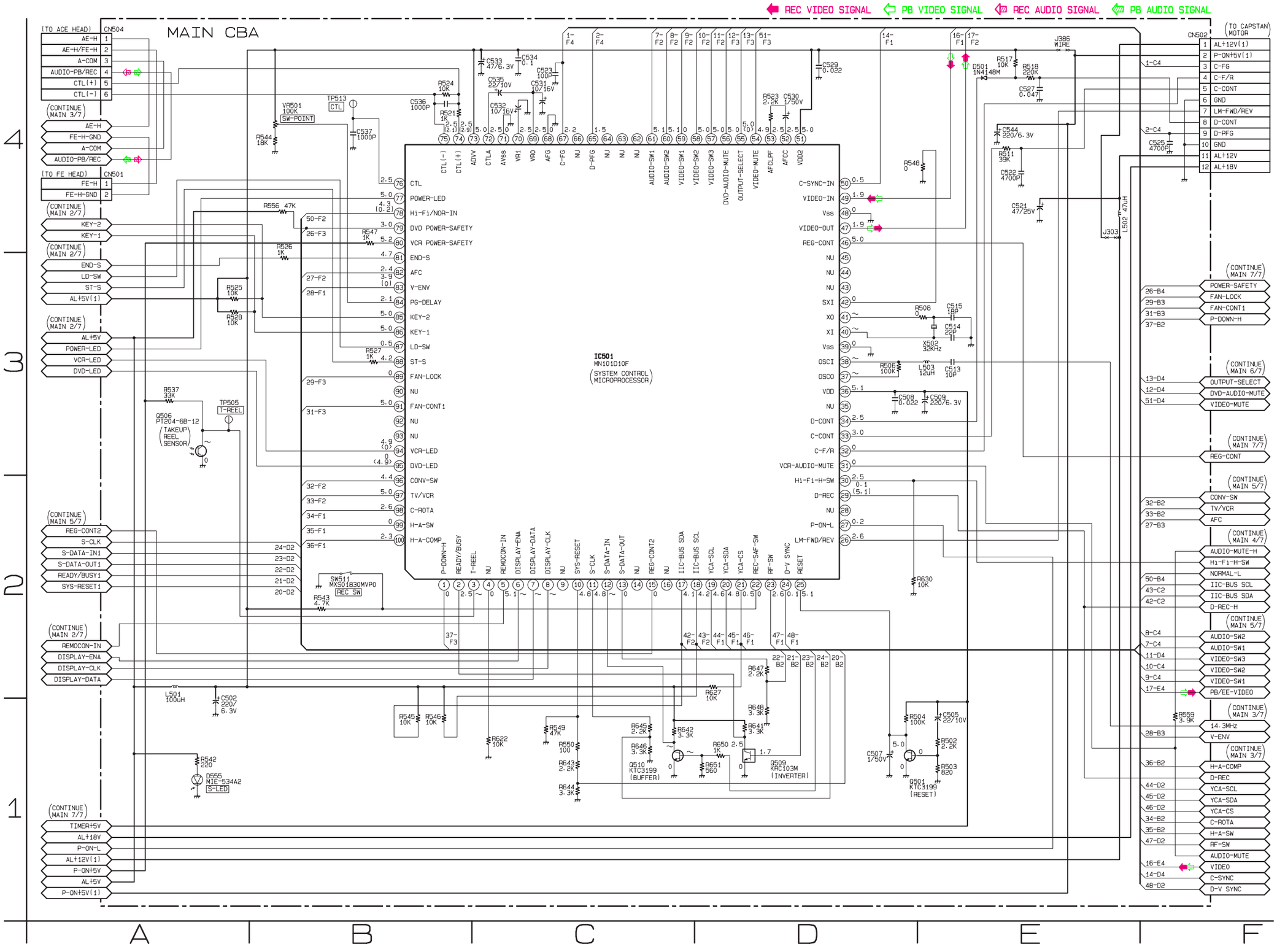
: Used to indicate a test point with no test pin.

: Used to indicate a test point with a test pin.

Main 1/7 Schematic Diagram < VCR Section >

MAIN 1/7

Ref No.	Position
IC	
IC501	C-3
TRANSISTORS	
Q501	D-1
Q506	A-3
Q509	D-1
Q510	C-1
CONNECTORS	
CN501	A-4
CN502	F-4
CN504	A-4
VARIABLE RESISTOR	
VR501	B-4
TEST POINTS	
TP505	A-3
TP513	B-4



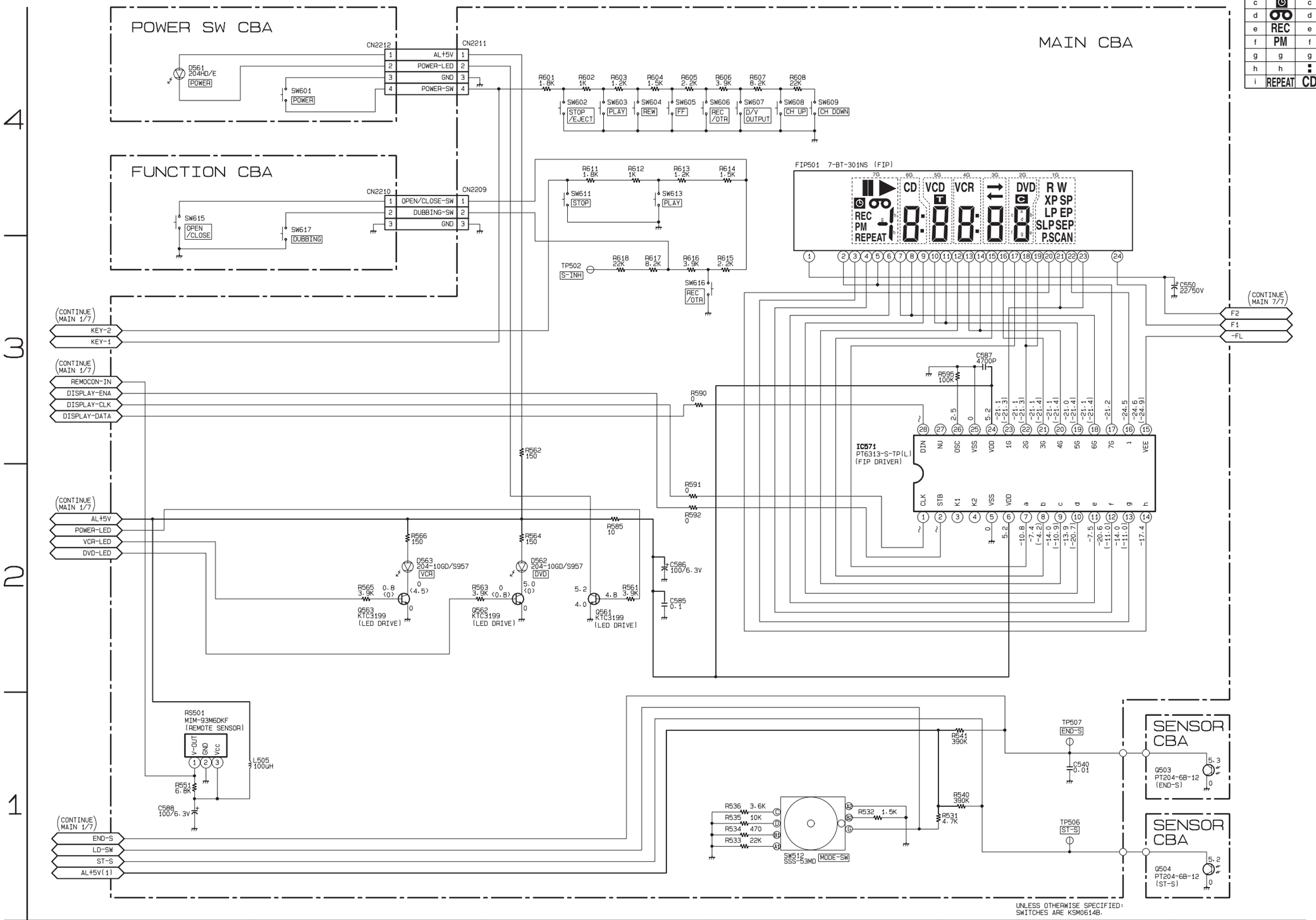
Main 2/7, Power SW, Function & Sensor Schematic Diagram < VCR Section >

FIP501 MATRIX CHART

	7G	6G	5G	4G	3G	2G	1G
a	▶	a	a	a	a	a	XP
b	▮▮	b	b	b	b	b	SP
c	🕒	c	c	c	c	c	LP
d	📼	d	d	d	d	d	EP
e	REC	e	e	e	e	e	SLP
f	PM	f	f	f	f	f	SEP
g	g	g	g	g	g	g	P.SCAN
h	h	:	T	:	⇒	C	W
i	REPEAT	CD	VCD	VCR	⇐	DVD	R

MAIN 2/7

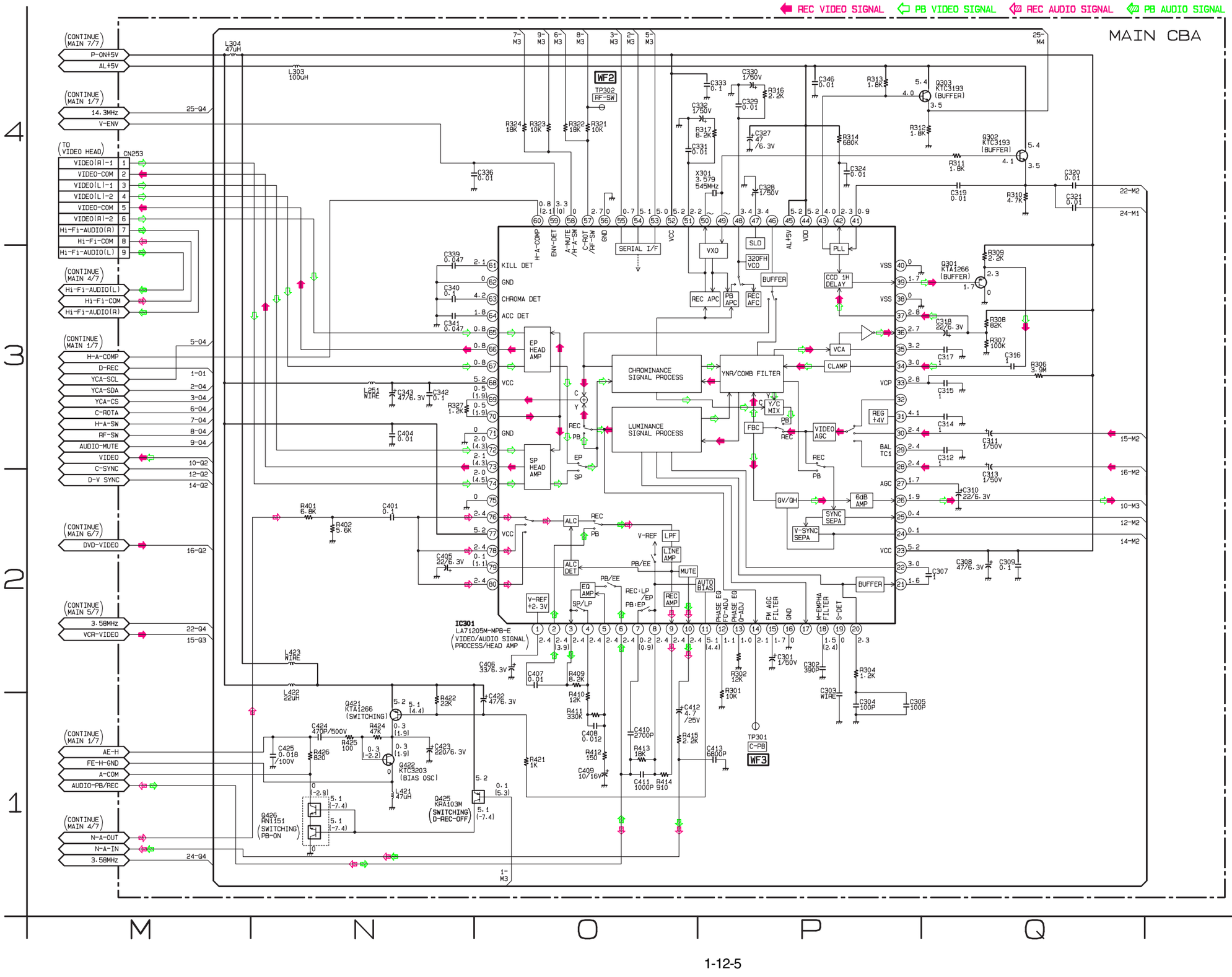
Ref No.	Position
IC	
IC571	K-2
TRANSISTORS	
Q561	I-2
Q562	I-2
Q563	H-2
CONNECTORS	
CN2209	H-4
CN2211	H-4
TEST POINTS	
TP502	I-3
TP506	K-1
TP507	K-1



Main 3/7 Schematic Diagram < VCR Section >

MAIN 3/7

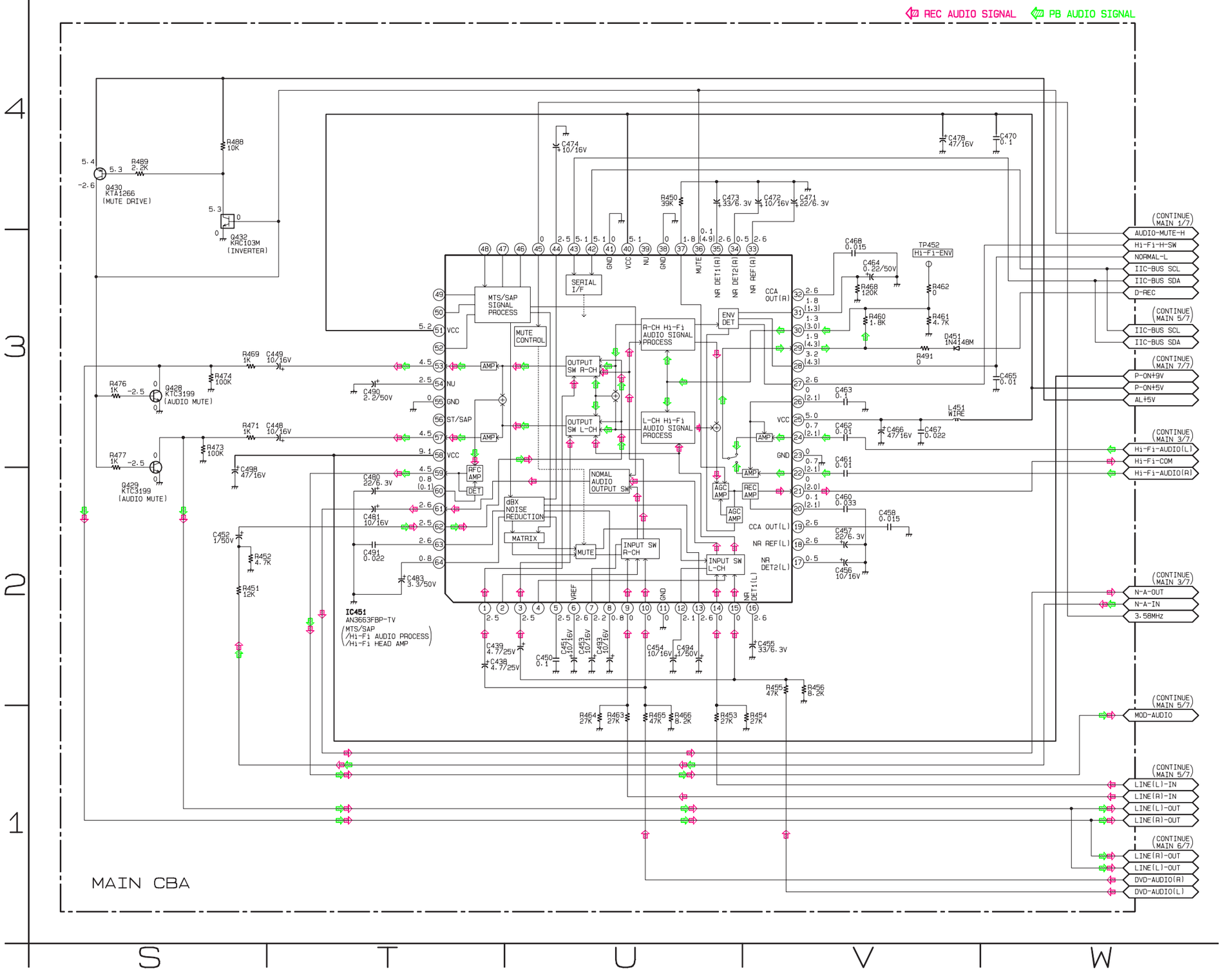
Ref No.	Position
IC	
IC301	O-2
TRANSISTORS	
Q301	Q-3
Q302	Q-4
Q303	Q-4
Q421	N-1
Q422	N-1
Q425	N-1
Q426	N-1
CONNECTOR	
CN253	M-4
TEST POINTS	
TP301	P-1
TP302	O-4



Main 4/7 Schematic Diagram < VCR Section >

MAIN 4/7

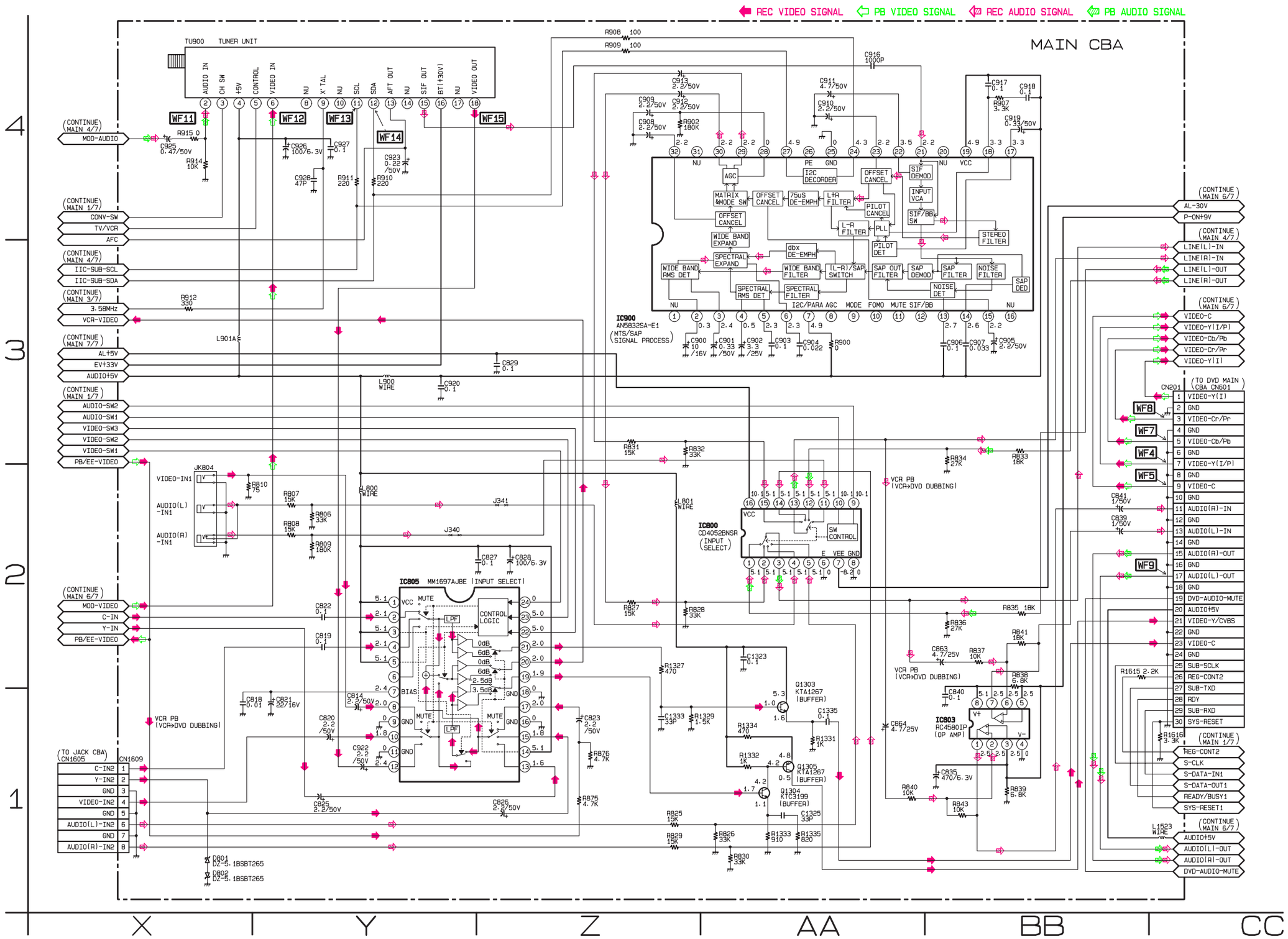
Ref No.	Position
IC	
IC451	T-2
TRANSISTORS	
Q428	S-3
Q429	S-2
Q430	S-4
Q432	S-3
TEST POINTS	
TP452	V-3



Main 5/7 Schematic Diagram < VCR Section >

MAIN 5/7

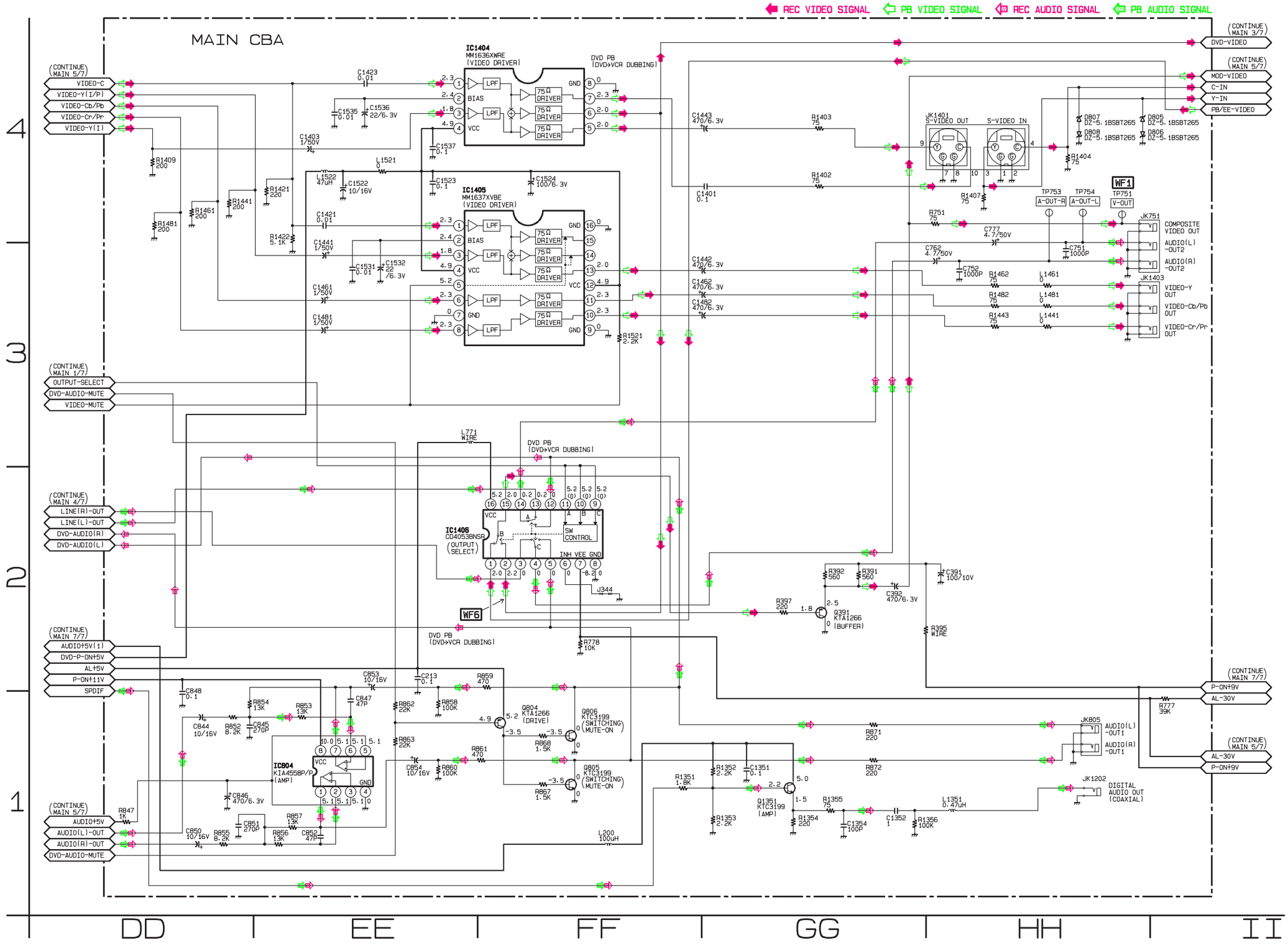
Ref No.	Position
ICS	
IC800	AA-2
IC803	BB-1
IC805	Y-2
IC900	Z-3
TRANSISTORS	
Q1303	AA-1
Q1304	AA-1
Q1305	AA-1
CONNECTORS	
CN201	CC-3
CN1609	X-1



Main 6/7 Schematic Diagram < VCR Section >

MAIN 6/7

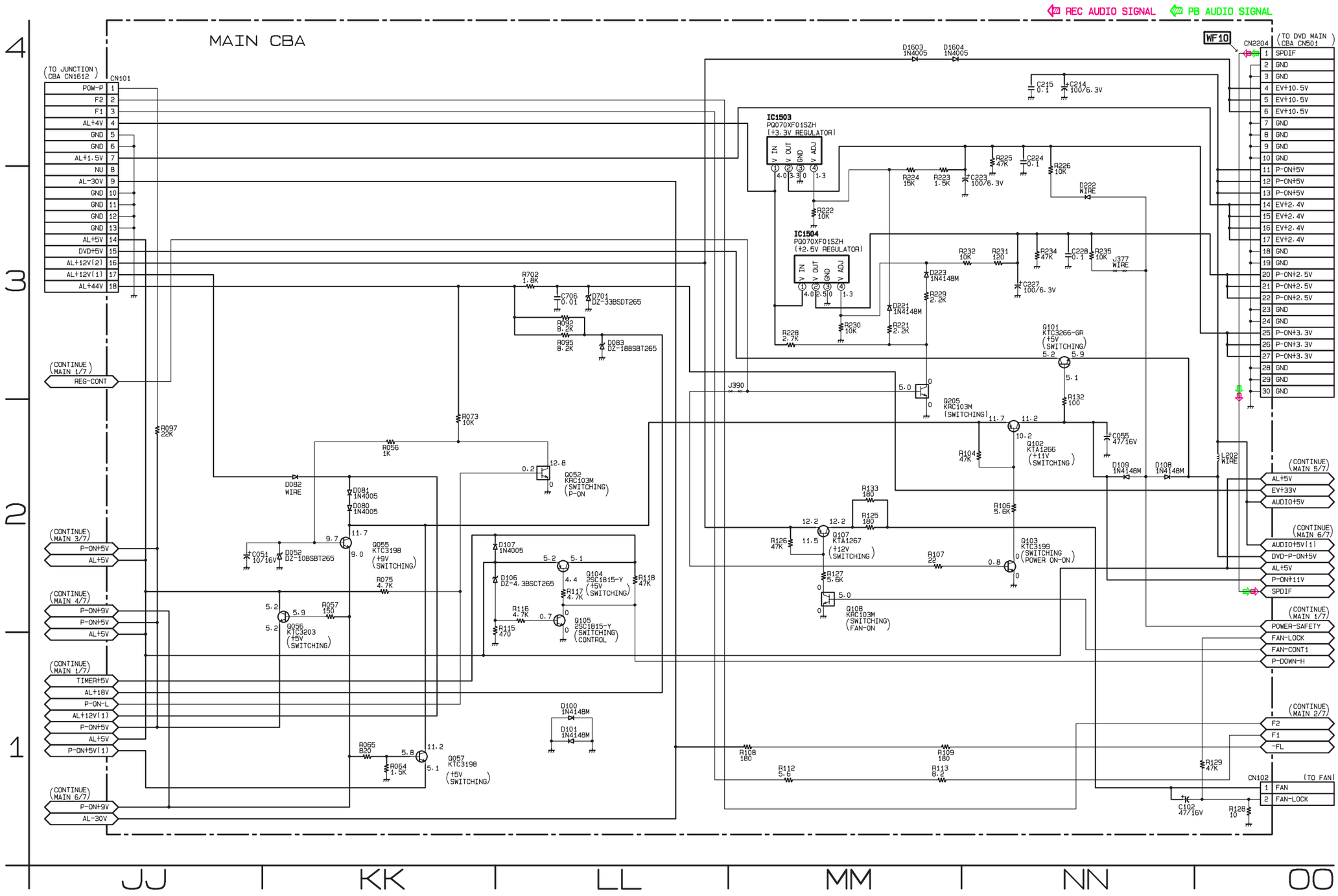
Ref No.	Position
ICS	
IC804	EE-1
IC1404	FF-4
IC1405	FF-4
IC1406	FF-2
TRANSISTORS	
Q391	GG-2
Q804	FF-1
Q805	FF-1
Q806	FF-1
Q1351	GG-1
TEST POINTS	
TP751	HH-4
TP753	HH-4
TP754	HH-4



Main 7/7 Schematic Diagram < VCR Section >

MAIN 7/7

Ref No.	Position
ICS	
IC1503	MM-4
IC1504	MM-3
TRANSISTORS	
Q052	LL-2
Q055	KK-2
Q056	KK-2
Q057	KK-1
Q101	NN-3
Q102	NN-2
Q103	NN-2
Q104	LL-2
Q105	LL-1
Q107	MM-2
Q108	MM-2
Q205	MM-3
CONNECTORS	
CN101	JJ-4
CN102	OO-1
CN2204	OO-4



Power Supply & Junction Schematic Diagram < VCR Section >

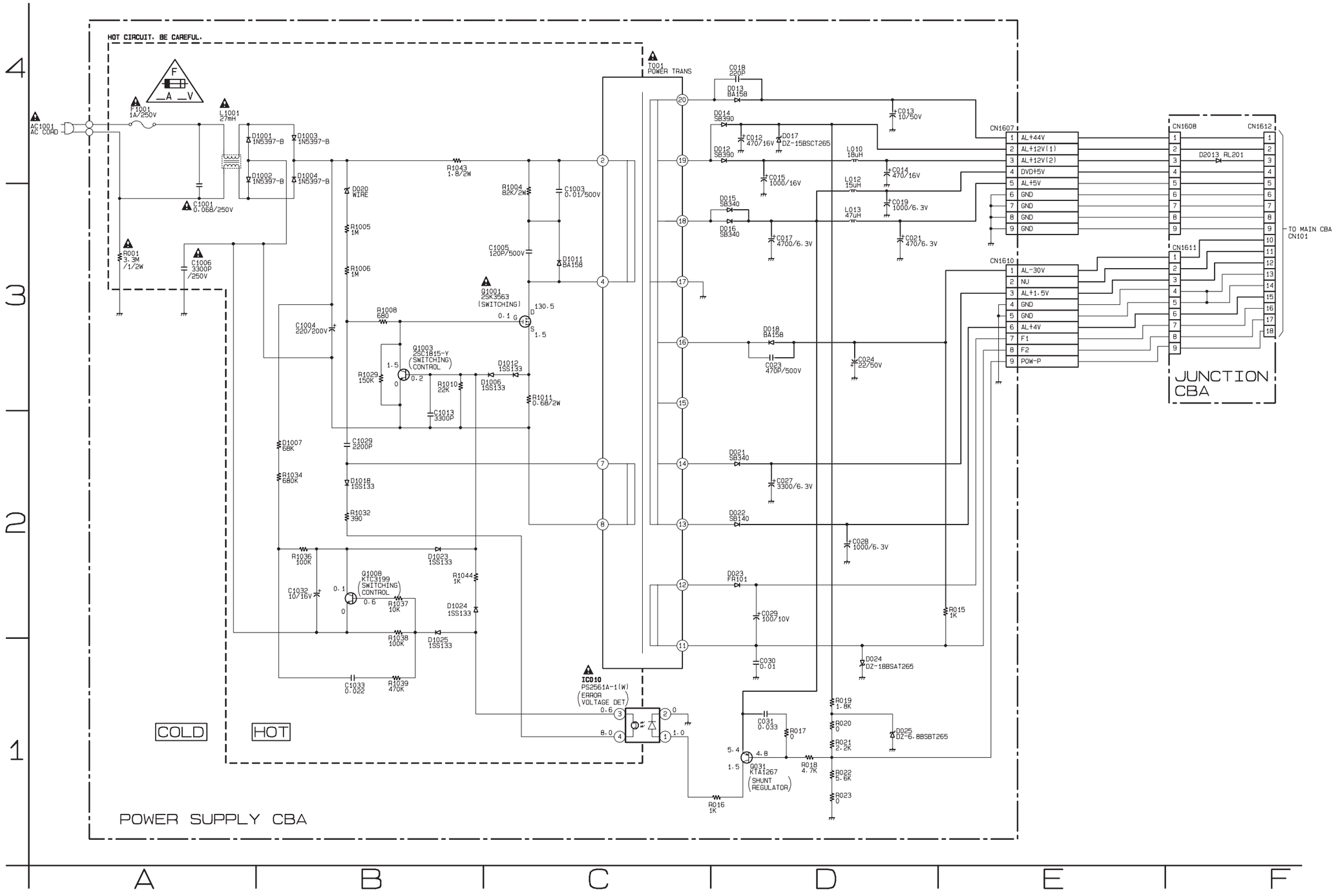
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION !
For continued protection against fire hazard,
replace only with the same type fuse.
ATTENTION : Pour une protection continue les risqes d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."

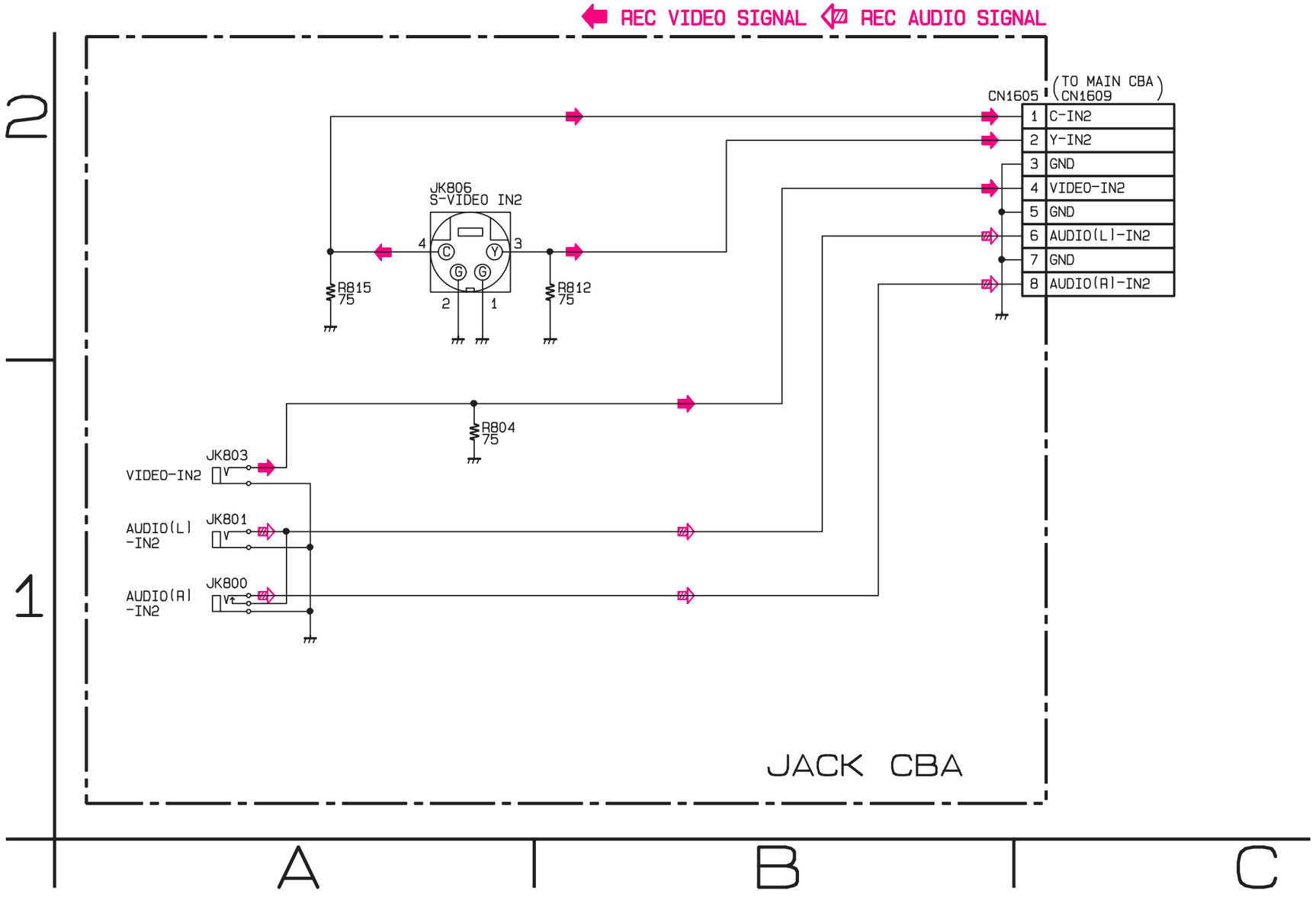
NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

POWER SUPPLY

Ref No.	Position
IC	
IC010	C-1
TRANSISTORS	
Q031	D-1
Q1001	C-3
Q1003	B-3
Q1008	B-2
CONNECTORS	
CN1607	E-4
CN1610	E-3



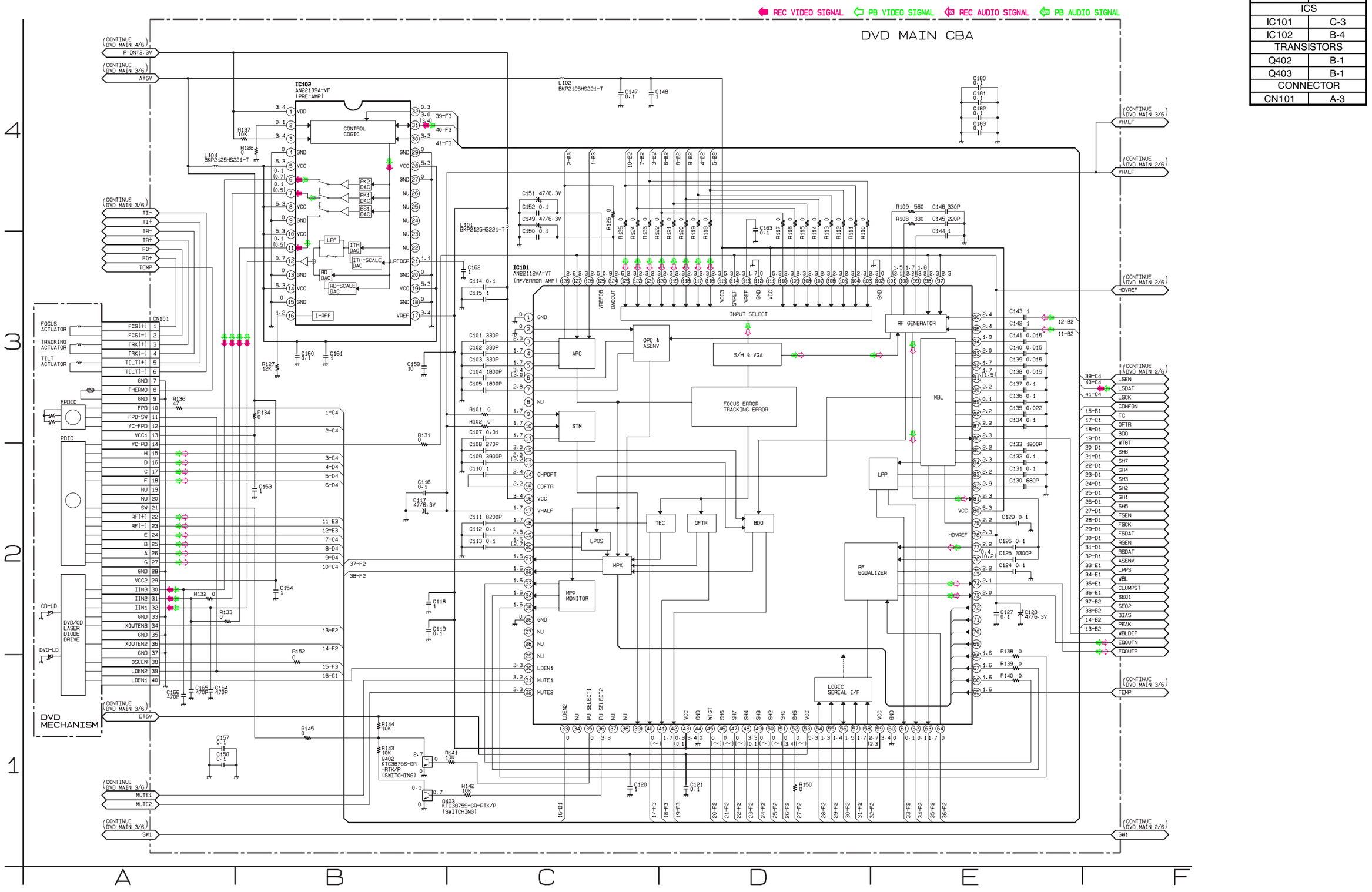
Jack Schematic Diagram < VCR Section >



DVD Main 1/6 Schematic Diagram < DVD Section >

DVD MAIN 1/6

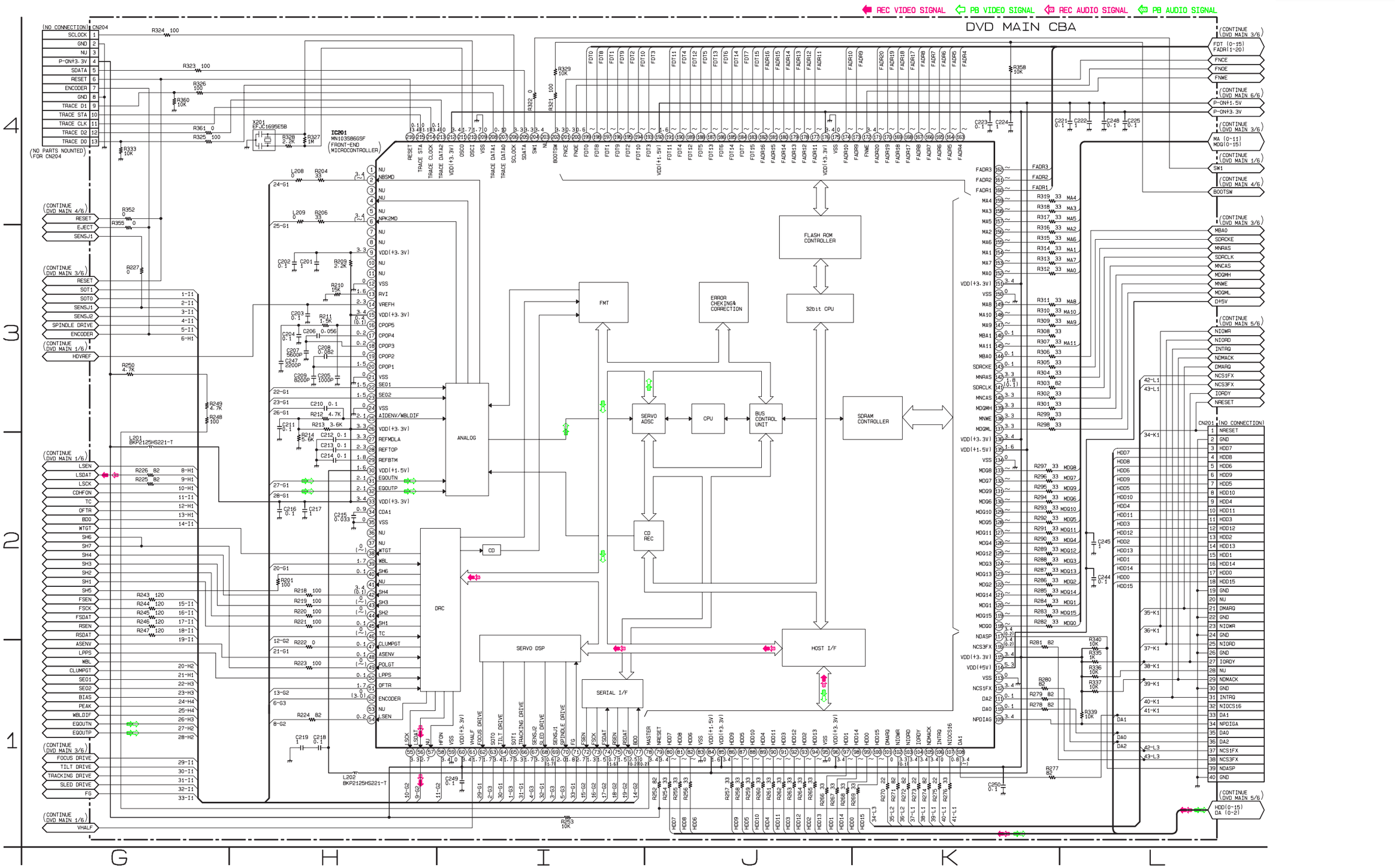
Ref No.	Position
ICS	
IC101	C-3
IC102	B-4
TRANSISTORS	
Q402	B-1
Q403	B-1
CONNECTOR	
CN101	A-3



DVD Main 2/6 Schematic Diagram < DVD Section >

DVD MAIN 2/6

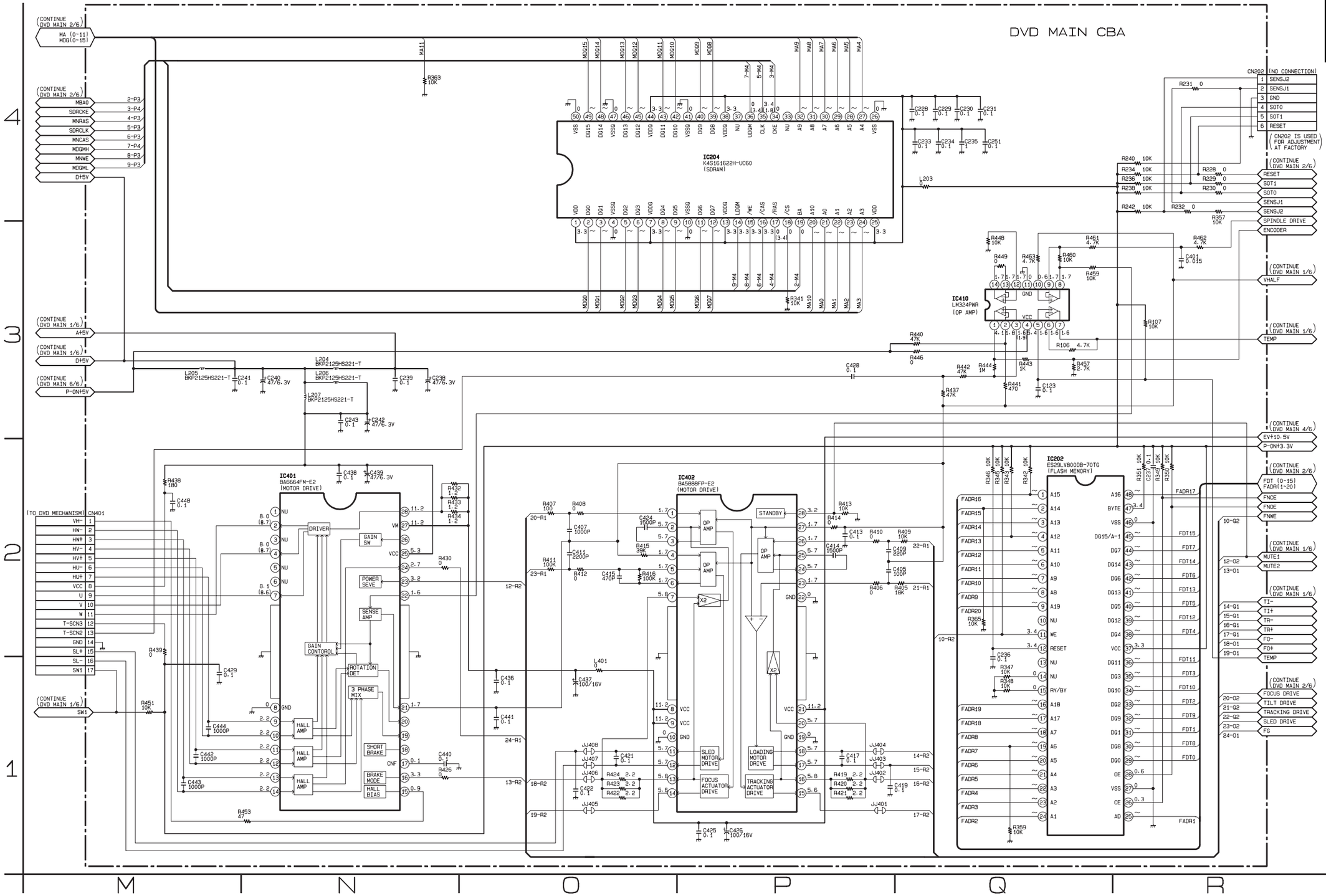
Ref No.	Position
IC	
IC201	H-4
CONNECTORS	
CN201	L-3



DVD Main 3/6 Schematic Diagram < DVD Section >

DVD MAIN 3/6

Ref No.	Position
ICS	
IC202	Q-2
IC204	P-4
IC401	N-2
IC402	P-2
IC410	Q-3
CONNECTORS	
CN202	R-4
CN401	M-2

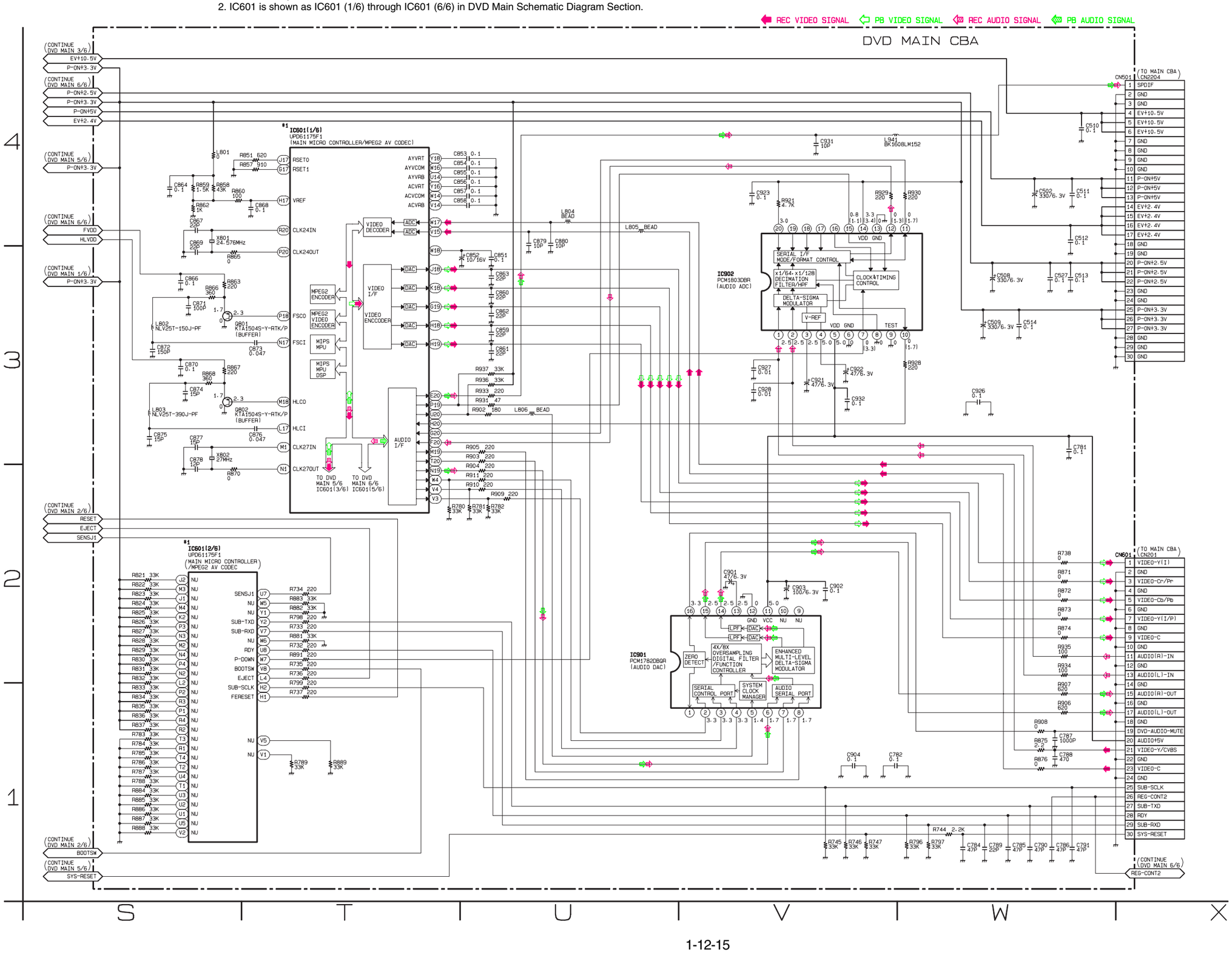


DVD Main 4/6 Schematic Diagram < DVD Section >

NOTE:
1. The order of pins shown are different from that of IC601 itself.
2. IC601 is shown as IC601 (1/6) through IC601 (6/6) in DVD Main Schematic Diagram Section.

DVD MAIN 4/6

Ref No.	Position
ICS	
IC601(1/6)	T-4
IC601(2/6)	S-2
IC901	V-2
IC902	V-3
TRANSISTORS	
Q801	S-3
Q802	S-3
CONNECTORS	
CN501	X-4
CN601	X-2

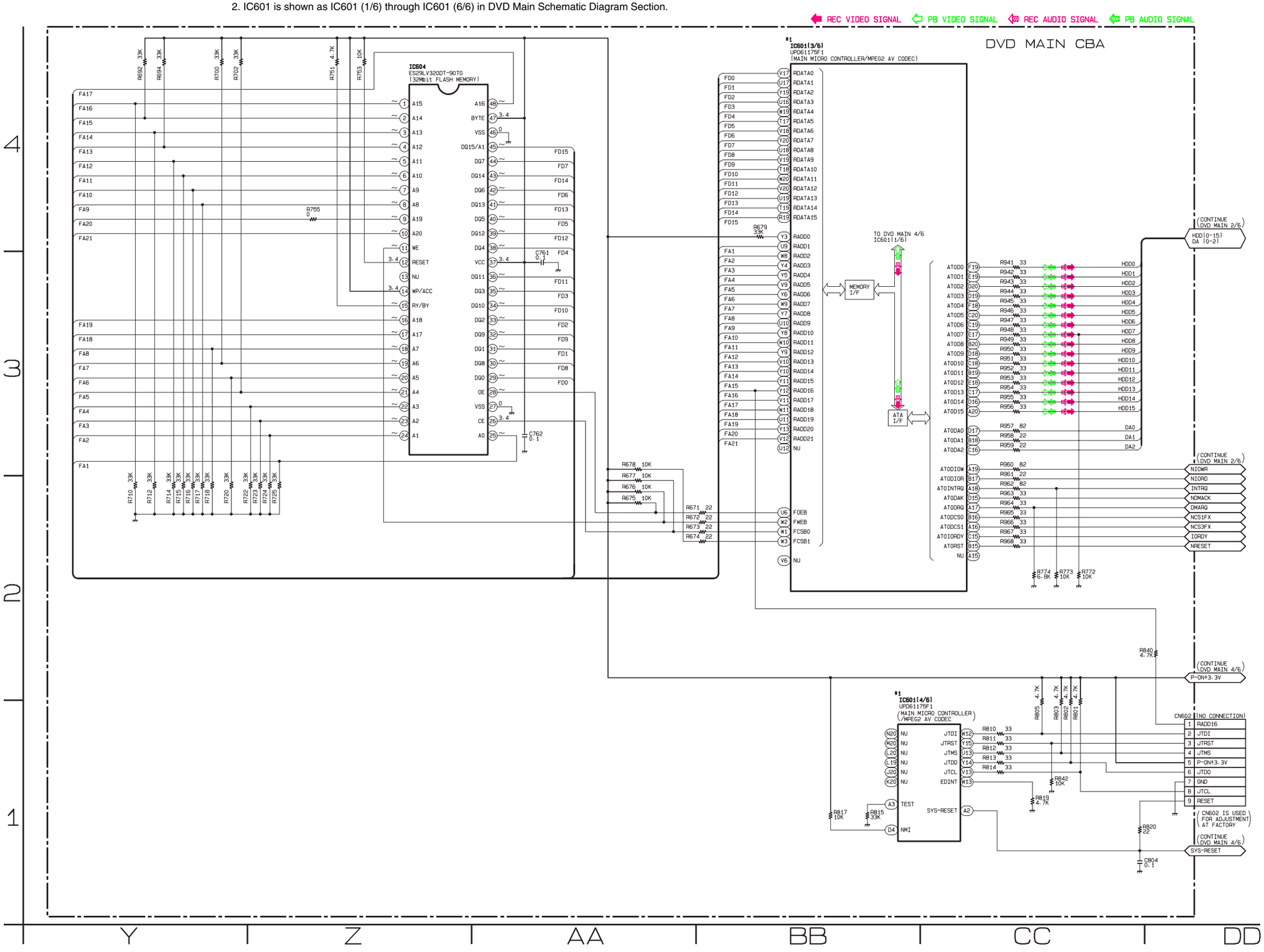


DVD Main 5/6 Schematic Diagram < DVD Section >

NOTE:
1. The order of pins shown are different from that of IC601 itself.
2. IC601 is shown as IC601 (1/6) through IC601 (6/6) in DVD Main Schematic Diagram Section.

DVD MAIN 5/6

Ref No.	Position
ICS	
IC601(3/6)	BB-4
IC601(4/6)	BB-1
IC604	Z-4
CONNECTOR	
CN602	DD-1



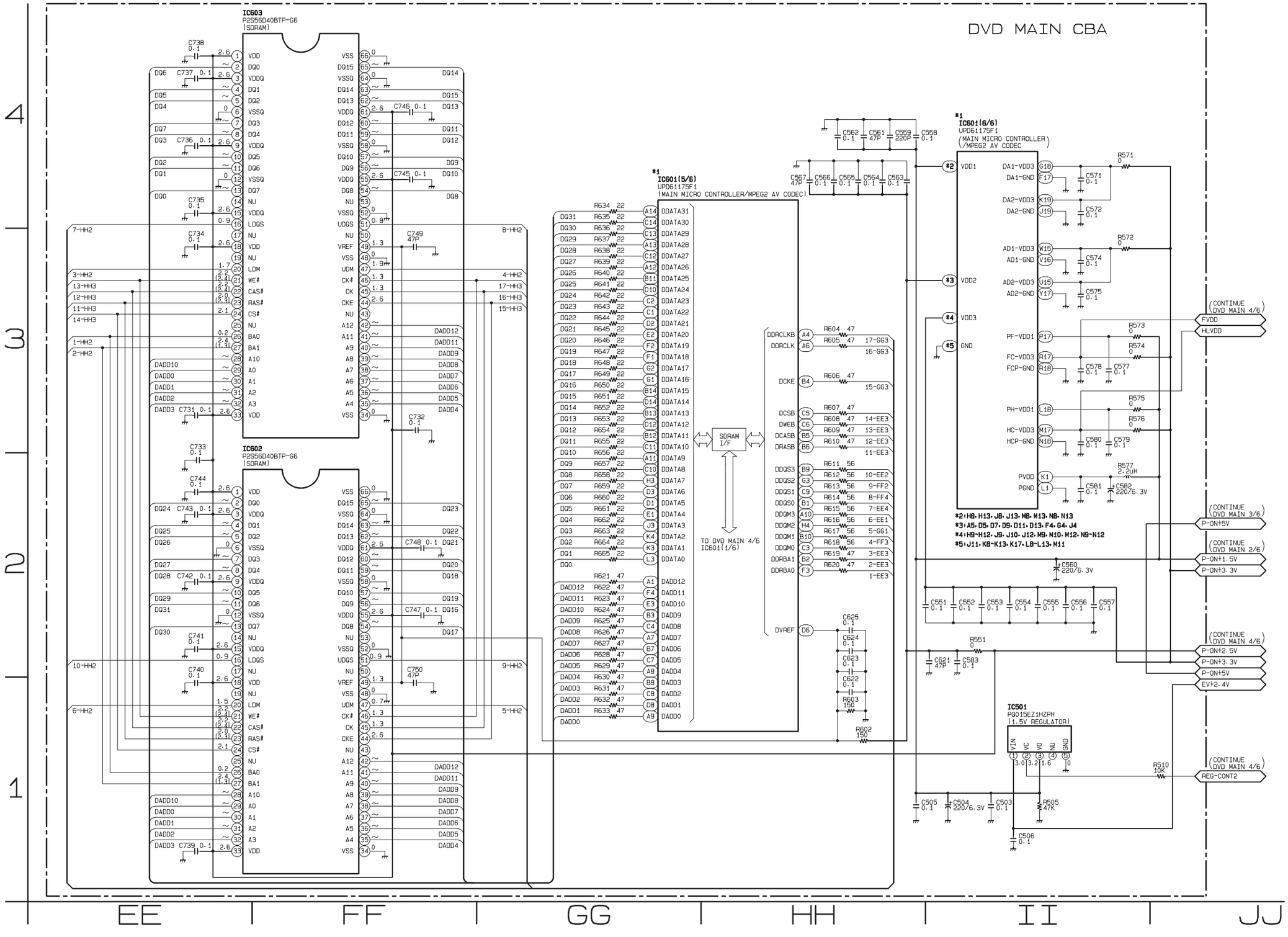
E9610SCD5

DVD Main 6/6 Schematic Diagram < DVD Section >

NOTE:
1. The order of pins shown are different from that of IC601 itself.
2. IC601 is shown as IC601 (1/6) through IC601 (6/6) in DVD Main Schematic Diagram Section.

DVD MAIN 6/6

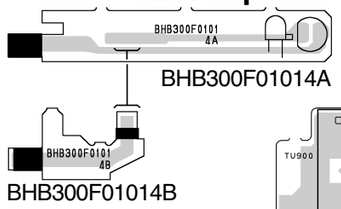
Ref No.	Position
ICS	
IC501	II-1
IC601(5/6)	GG-4
IC601(6/6)	II-4
IC602	FF-2
IC603	FF-4



E9610SCD6

Main CBA Top View

Sensor CBA Top View



WF1
TP751
V-OUT

TO SENSOR CBA
(START-SENSOR)

TO SENSOR CBA
(END-SENSOR)

WF3
TP301
C-PB

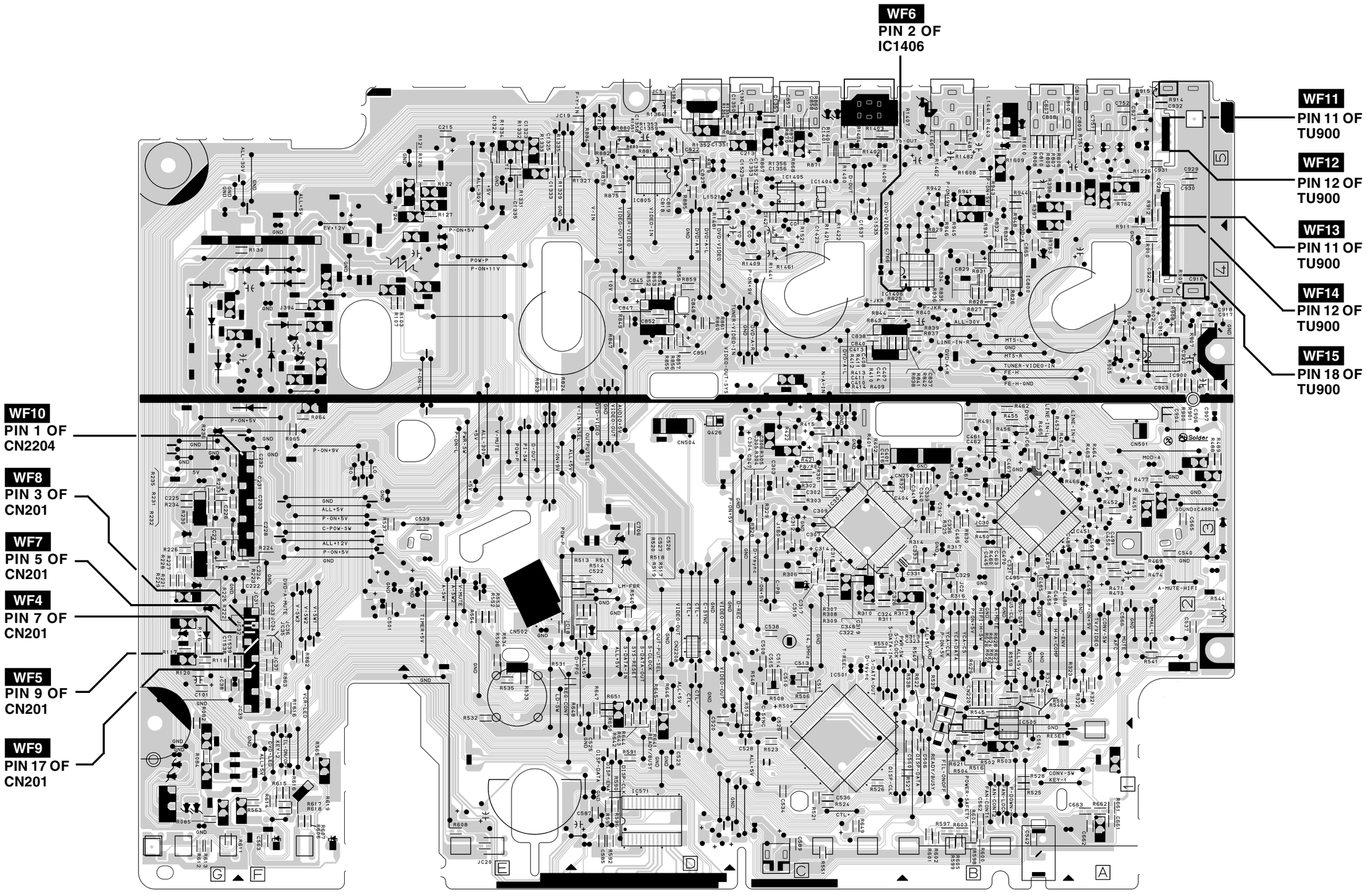
VR501
SW-P

TP513
CTL

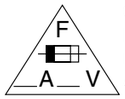
WF2
TP302
RF-SW

TP502
S-INH

Main CBA Bottom View



Power Supply CBA Top View



CAUTION !
For continued protection against fire hazard,
replace only with the same type fuse.
ATTENTION : Pour une protection continue les risqes
d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

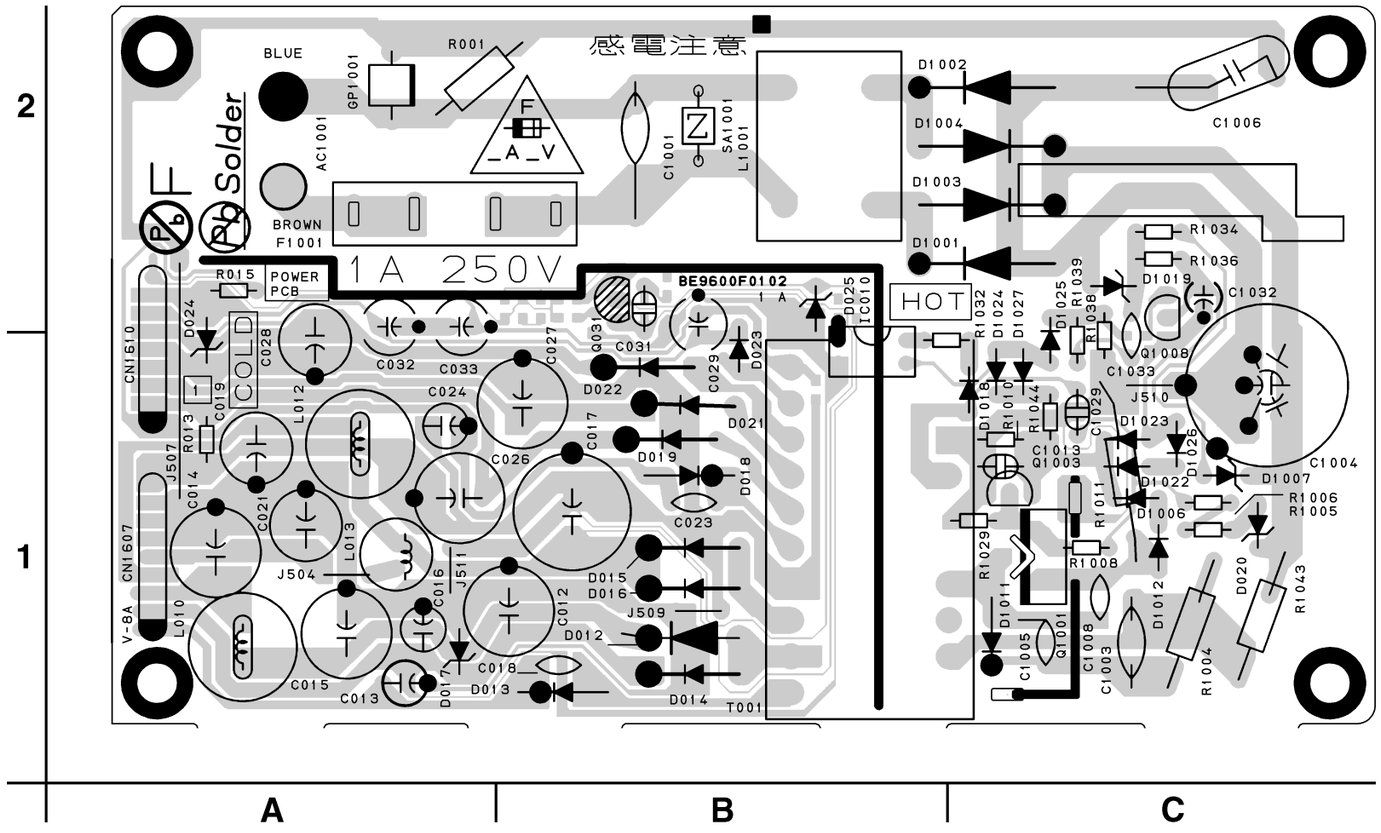
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

Because a hot chassis ground is present in the power supply circut, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly, when troubleshooting this type power supply circuit, a variable isolation transformer is required.

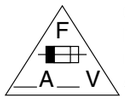
NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

MAIN CBA

Ref No.	Position	Ref No.	Position
ICS		TRANSISTORS	
IC301	C-3	Q506	C-2
IC451	A-3	Q509	D-1
IC501	C-2	Q510	D-1
IC571	D-1	Q561	A-1
IC800	B-4	Q562	F-1
IC803	C-4	Q563	F-1
IC804	D-4	Q804	C-5
IC805	D-5	Q805	C-5
IC900	A-4	Q806	C-5
IC1404	C-5	Q1303	E-5
IC1405	C-5	Q1304	E-5
IC1406	B-4	Q1305	E-5
IC1503	G-2	Q1351	D-5
IC1504	G-3	CONNECTORS	
TRANSISTORS		CN101	G-4
Q052	F-4	CN102	F-4
Q055	F-4	CN201	F-2
Q056	F-4	CN253	B-3
Q057	F-3	CN501	A-3
Q101	E-4	CN502	E-2
Q102	E-4	CN504	D-3
Q103	F-4	CN1609	G-1
Q104	G-2	CN2204	F-3
Q105	G-2	CN2209	F-1
Q107	E-5	CN2211	A-2
Q108	E-5	VARIABLE RESISTOR	
Q205	G-2	VR501	A-2
Q301	C-2	TEST POINTS	
Q302	C-2	TP301	A-2
Q303	C-2	TP302	A-2
Q391	A-5	TP452	A-3
Q421	C-3	TP502	F-1
Q422	C-4	TP505	E-3
Q425	C-3	TP506	E-3
Q426	D-3	TP507	A-2
Q428	A-3	TP513	A-2
Q429	A-3	TP751	A-5
Q430	A-3	TP753	A-5
Q432	A-3	TP754	A-5
Q501	B-1		



Power Supply CBA Bottom View

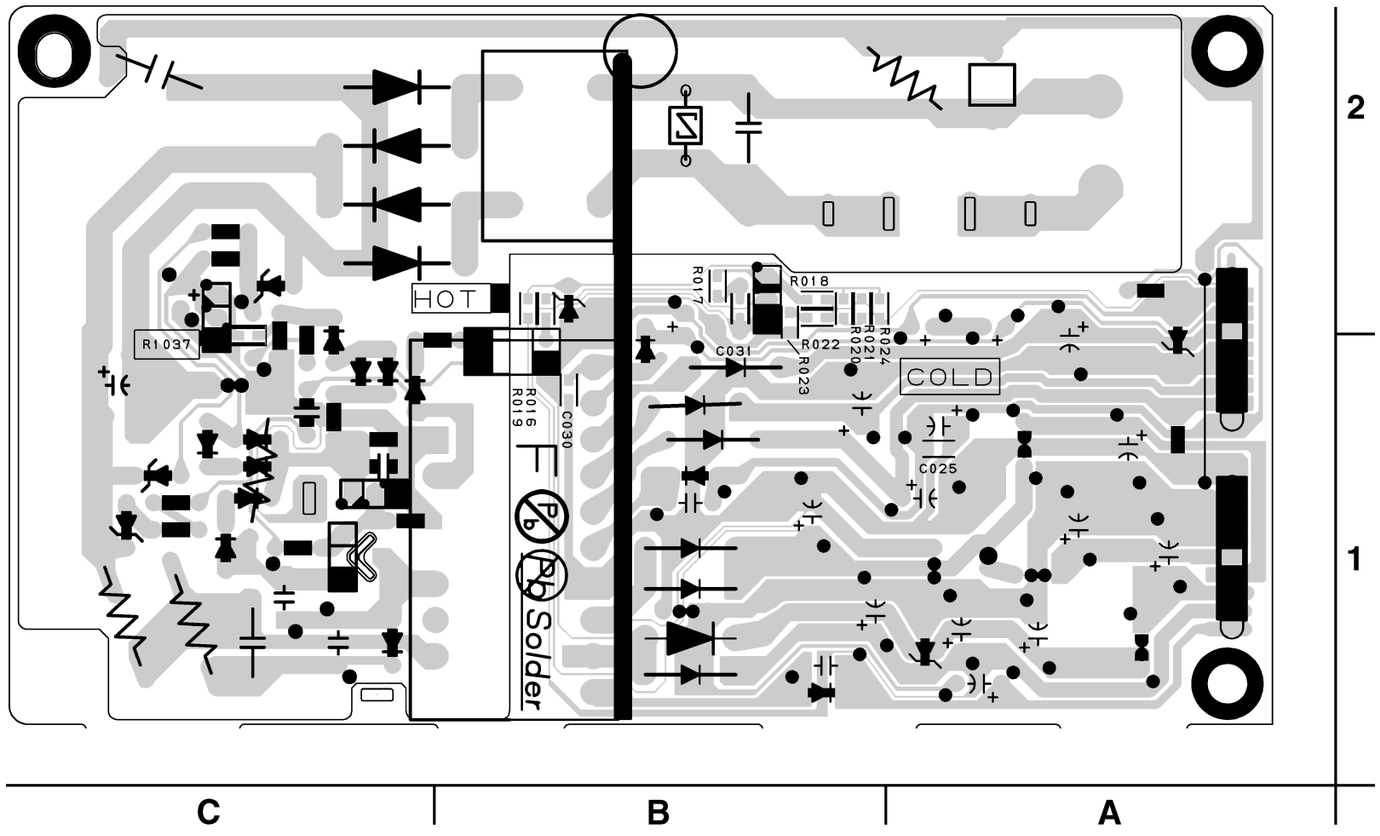


CAUTION !
For continued protection against fire hazard,
replace only with the same type fuse.
ATTENTION : Pour une protection continue les risqes
d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

NOTE:
The voltage for parts in hot circuit is measured using
hot GND as a common terminal.

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply
circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

Because a hot chassis ground is present in the power supply circut, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly, when troubleshooting this type power supply circuit, a variable isolation transformer is required.

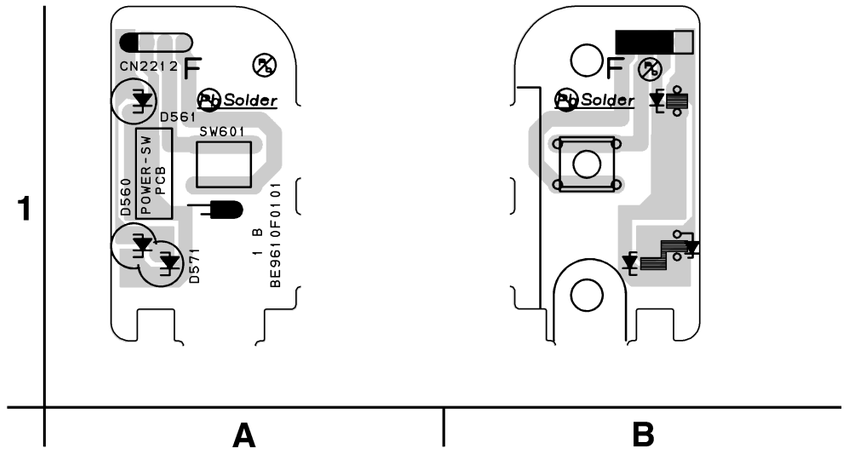


POWER SUPPLY CBA

Ref No.	Position
IC	
IC010	B-2
TRANSISTORS	
Q031	B-2
Q1001	C-1
Q1003	C-1
Q1008	C-2
CONNECTORS	
CN1607	A-1
CN1610	A-1

Power SW CBA Top View

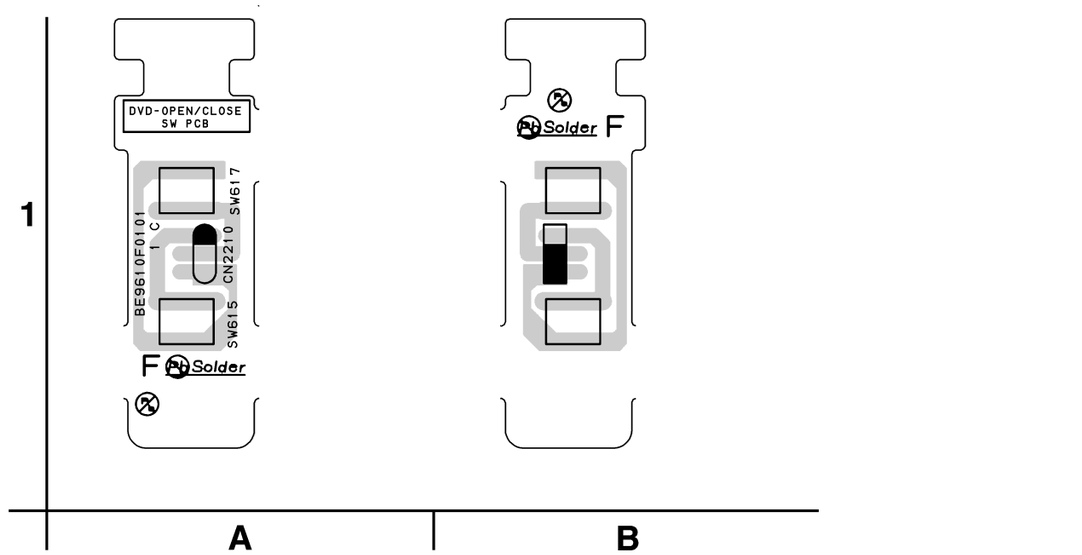
Power SW CBA Bottom View



BE9610F01011B

Function CBA Top View

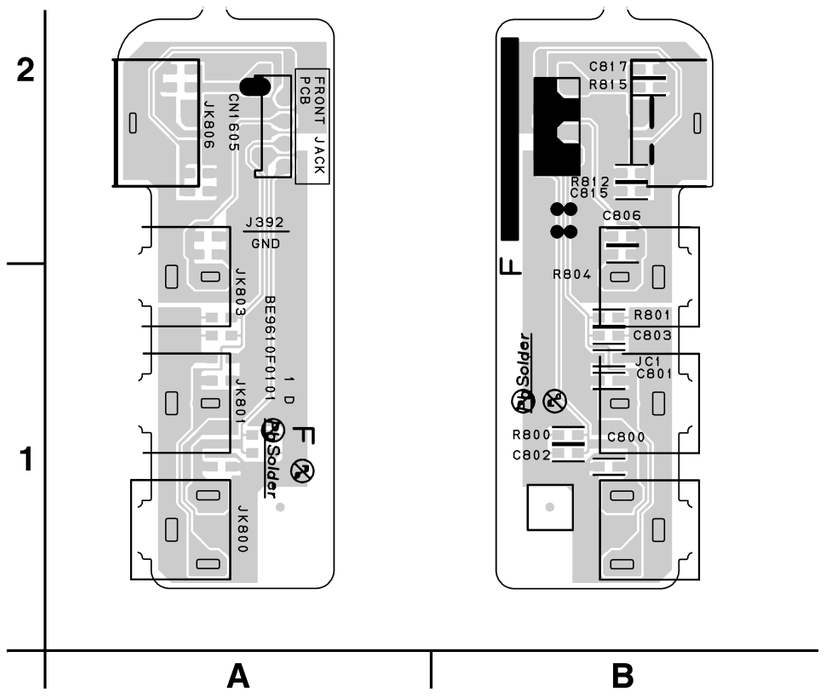
Function CBA Bottom View



BE9610F01011C

Jack CBA Top View

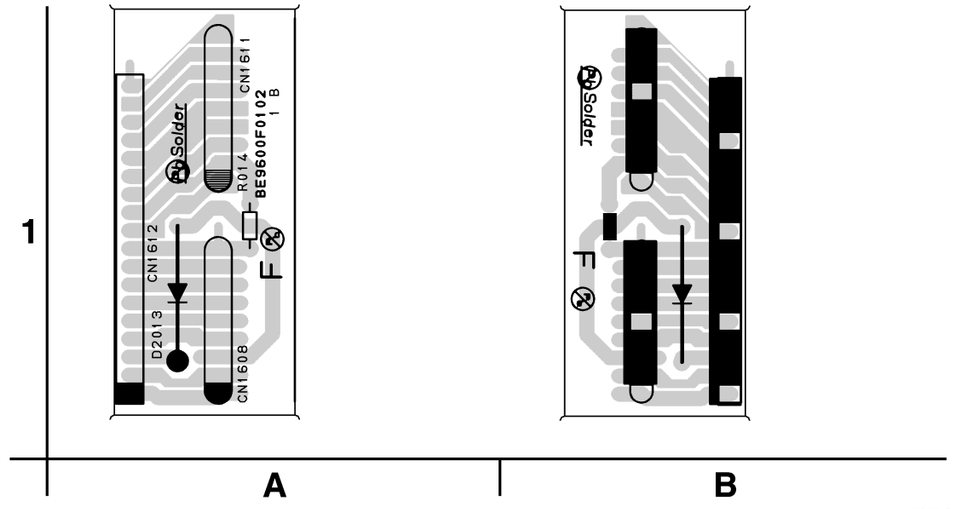
Jack CBA Bottom View



BE9610F01011D

Junction CBA Top View

Junction CBA Bottom View

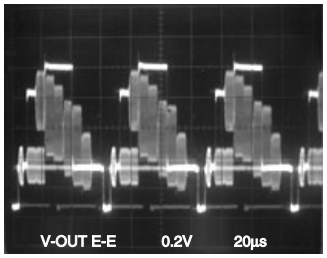


BE9600F01021B

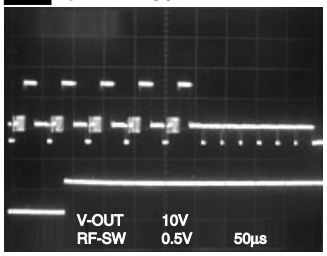
WAVEFORMS

NOTE:
Input: COLOR BAR SIGNAL (WITH 1KHz AUDIO SIGNAL)

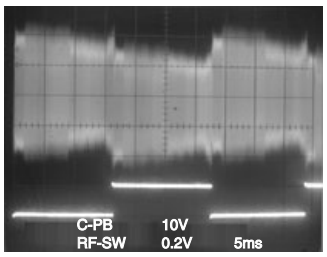
WF1 TP751



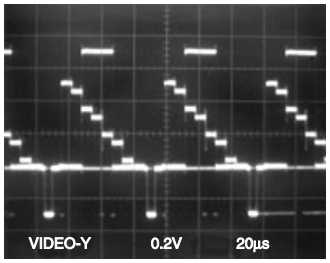
WF1 UPPER TP751
WF2 LOWER TP302



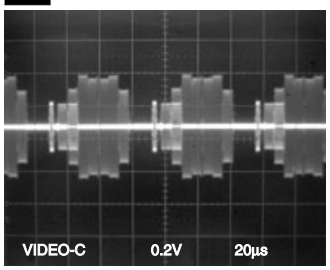
WF3 UPPER TP301
WF2 LOWER TP302



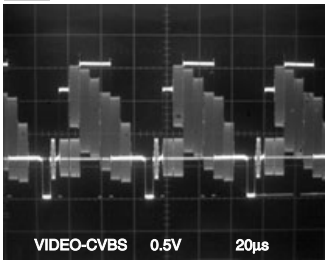
WF4 Pin 7 of CN201



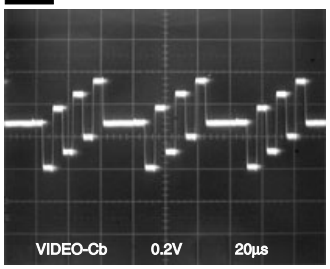
WF5 Pin 9 of CN201



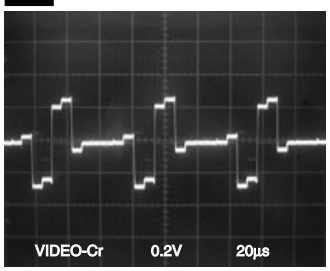
WF6 Pin 2 of IC1406



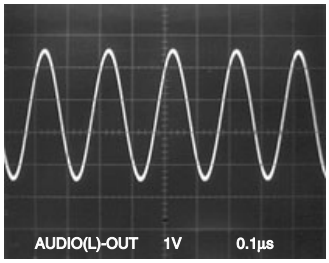
WF7 Pin 5 of CN201



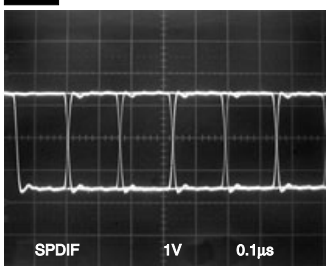
WF8 Pin 3 of CN201



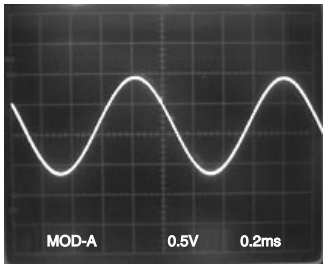
WF9 Pin 17 of CN201



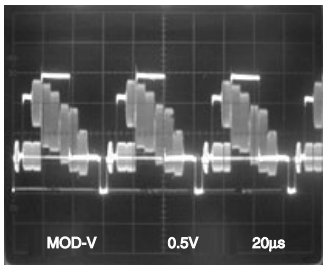
WF10 Pin 1 of CN2204



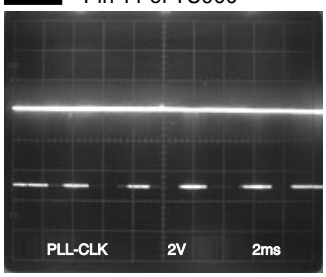
WF11 Pin 2 of TU900



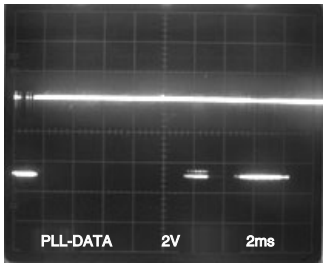
WF12 Pin 6 of TU900



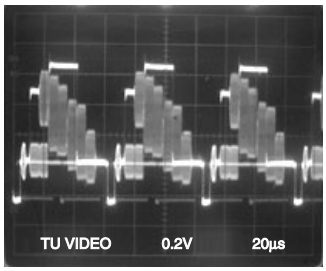
WF13 Pin 11 of TU900



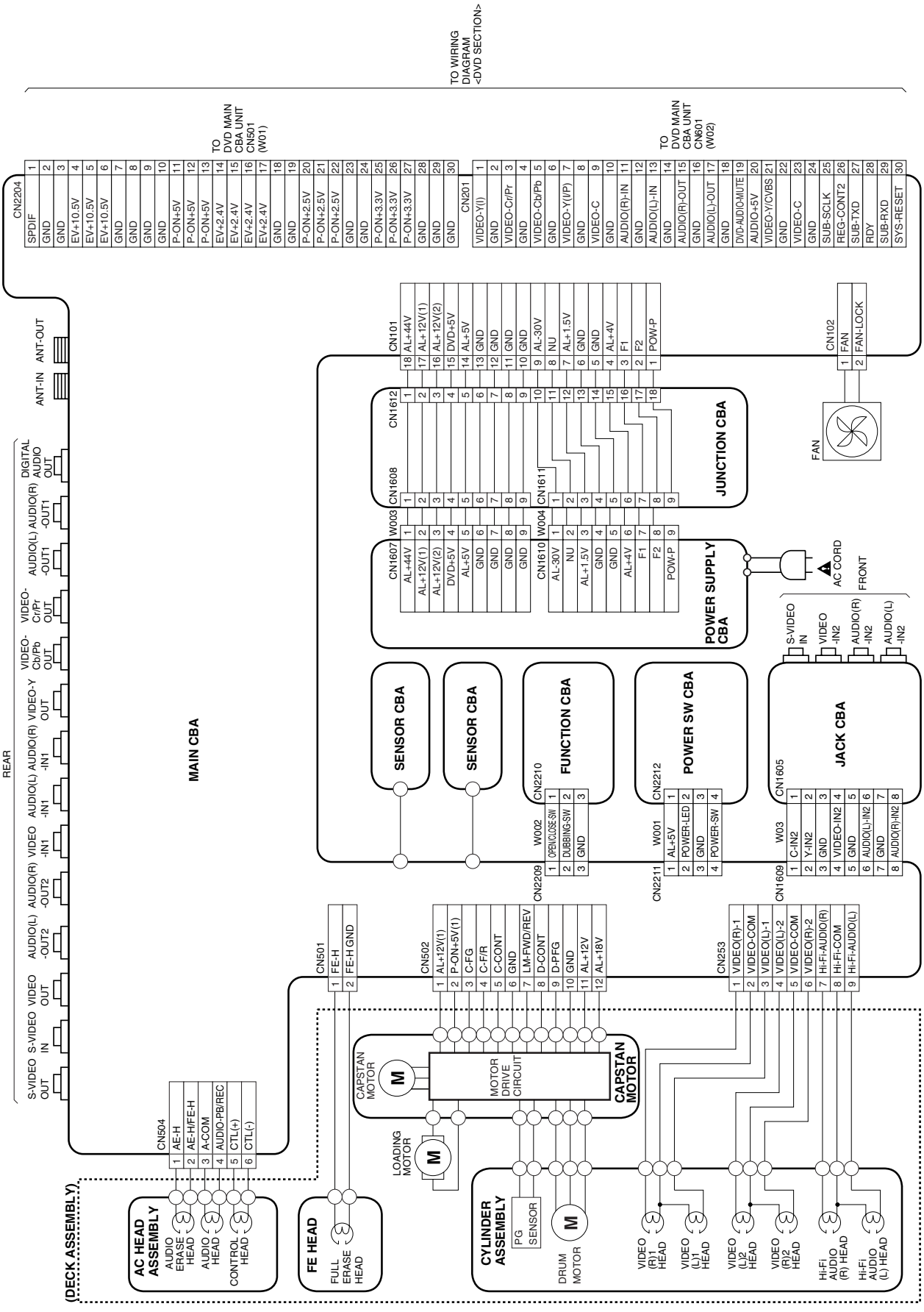
WF14 Pin 12 of TU900



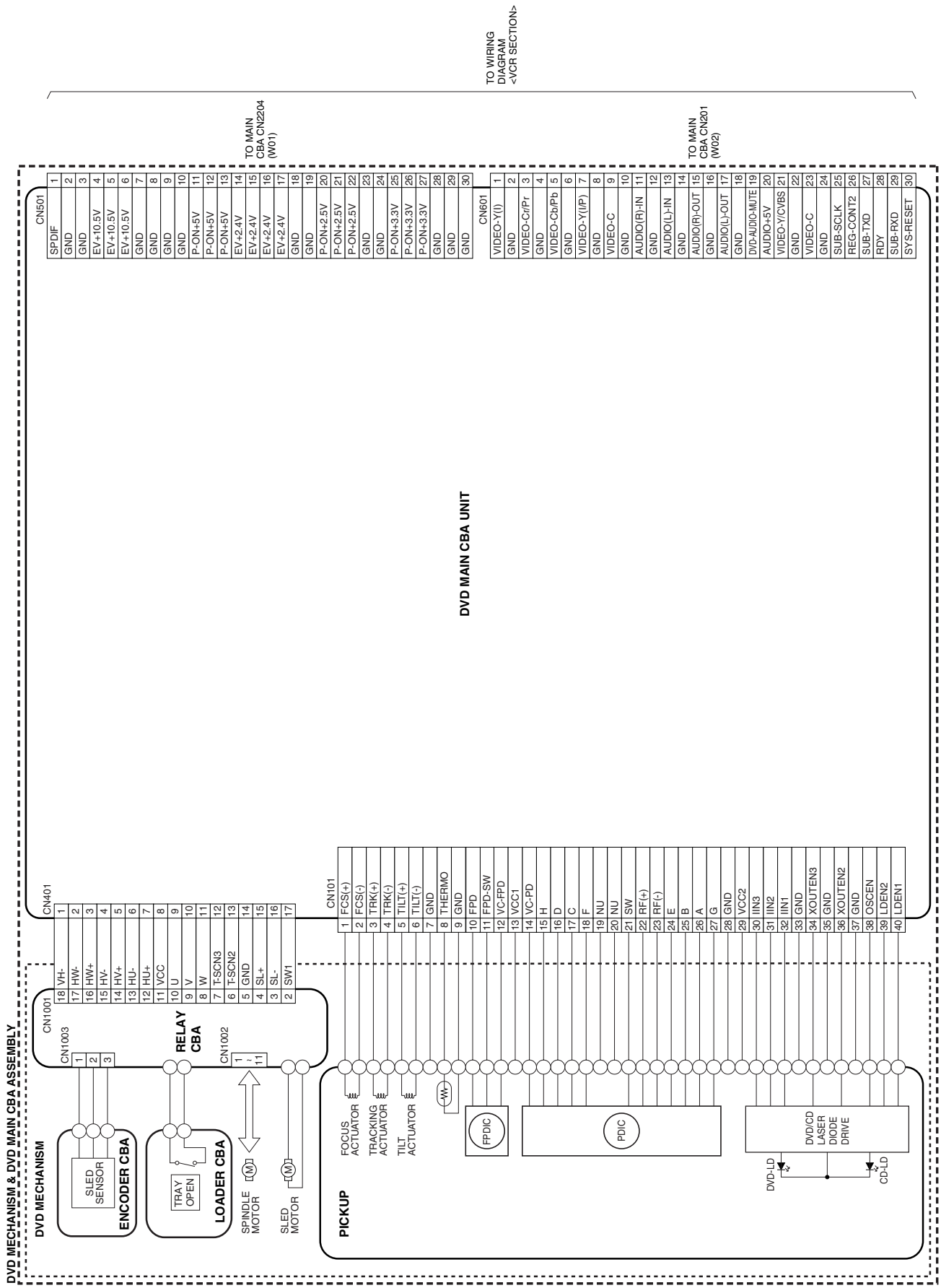
WF15 Pin 18 of TU900



WIRING DIAGRAM < VCR SECTION >



WIRING DIAGRAM < DVD SECTION >



SYSTEM CONTROL TIMING CHARTS

< VCR Section >

Mode SW: LD-SW

LD-SW Position detection A/D Input voltage Limit (Calculated voltage)	Symbol
3.76 V ~ 4.50 V (4.12 V)	EJ
4.51 V ~ 5.00 V (5.00 V)	CL
0.00 V ~ 0.25 V (0.00 V)	SB
1.06 V ~ 1.50 V (1.21 V)	TL
0.66 V ~ 1.05 V (0.91 V)	FB
1.99 V ~ 2.60 V (2.17 V)	SF
1.51 V ~ 1.98 V (1.80 V)	SM
3.20 V ~ 3.75 V (3.40 V)	AU
0.26 V ~ 0.65 V (0.44 V)	AL
4.51 V ~ 5.00 V (5.00 V)	SS
2.61 V ~ 3.19 V (2.97 V)	RS

Note:

Note: EJ → RS: Loading FWD (LM-FWD / REV “H”)
RS → EJ: Loading REV (LM-FWD / REV “L”)
Stop (A) = Loading
Stop (B) = Unloading

Note:

Symbol	Loading Status
EJ	Eject
CL	Eject ~ REW Reel
SB	REW Reel ~ Stop (B)
TL	Stop (B) ~ Brake Cancel
FB	Brake Cancel ~ FF / REW
SF	FF / REW ~ Stop (M), (FF / REW)
SM	Stop (M), (FF / REW) ~ Stop (A)
AU	Stop (A) ~ Play / REC
AL	Play / REC ~ Still / Slow
SS	Still / Slow ~ RS (REW Search)
RS	RS (REW Search)

Still/Slow Control Frame Advance Timing Chart

1) SP Mode

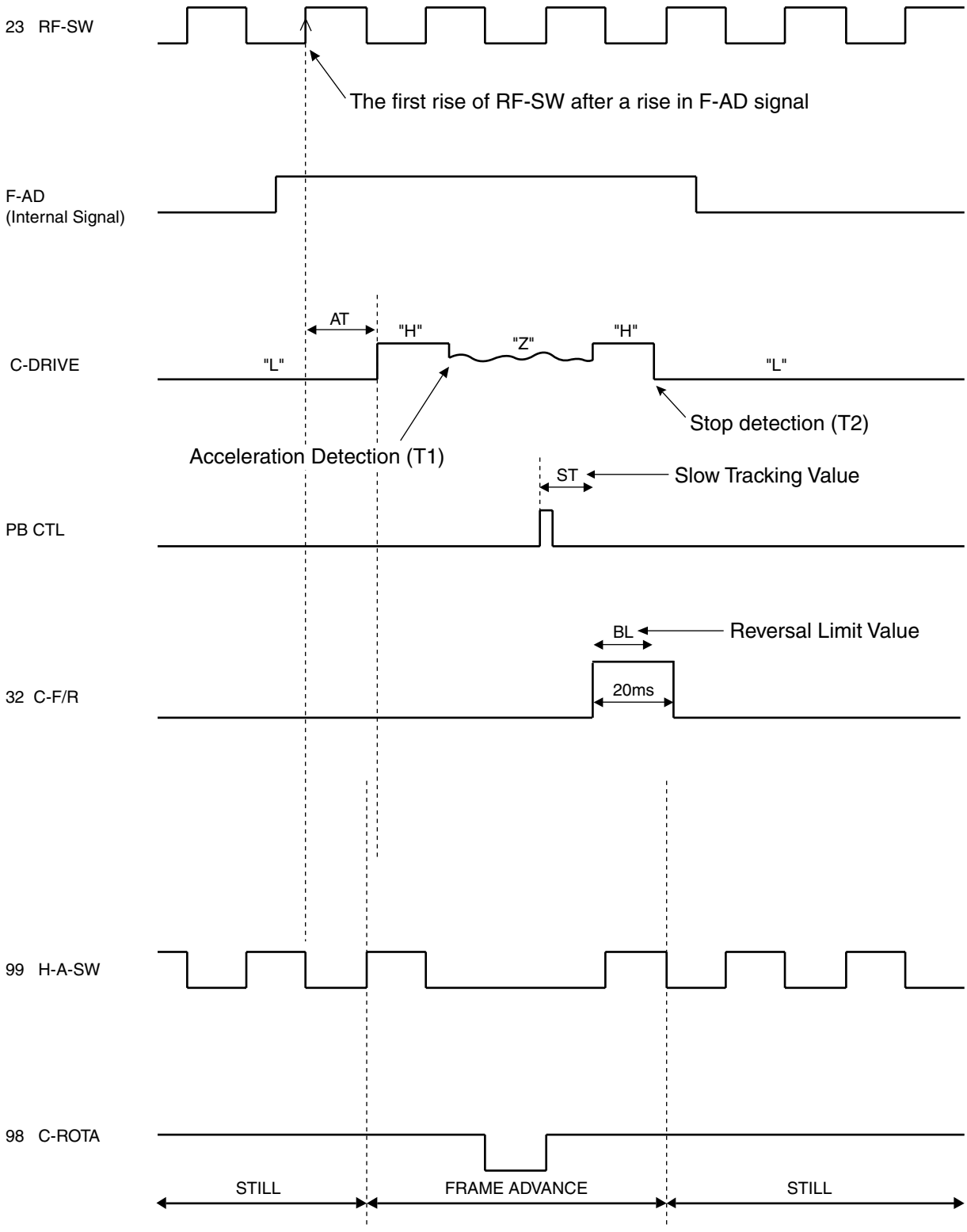


Fig. 1

2) LP/SLP Mode

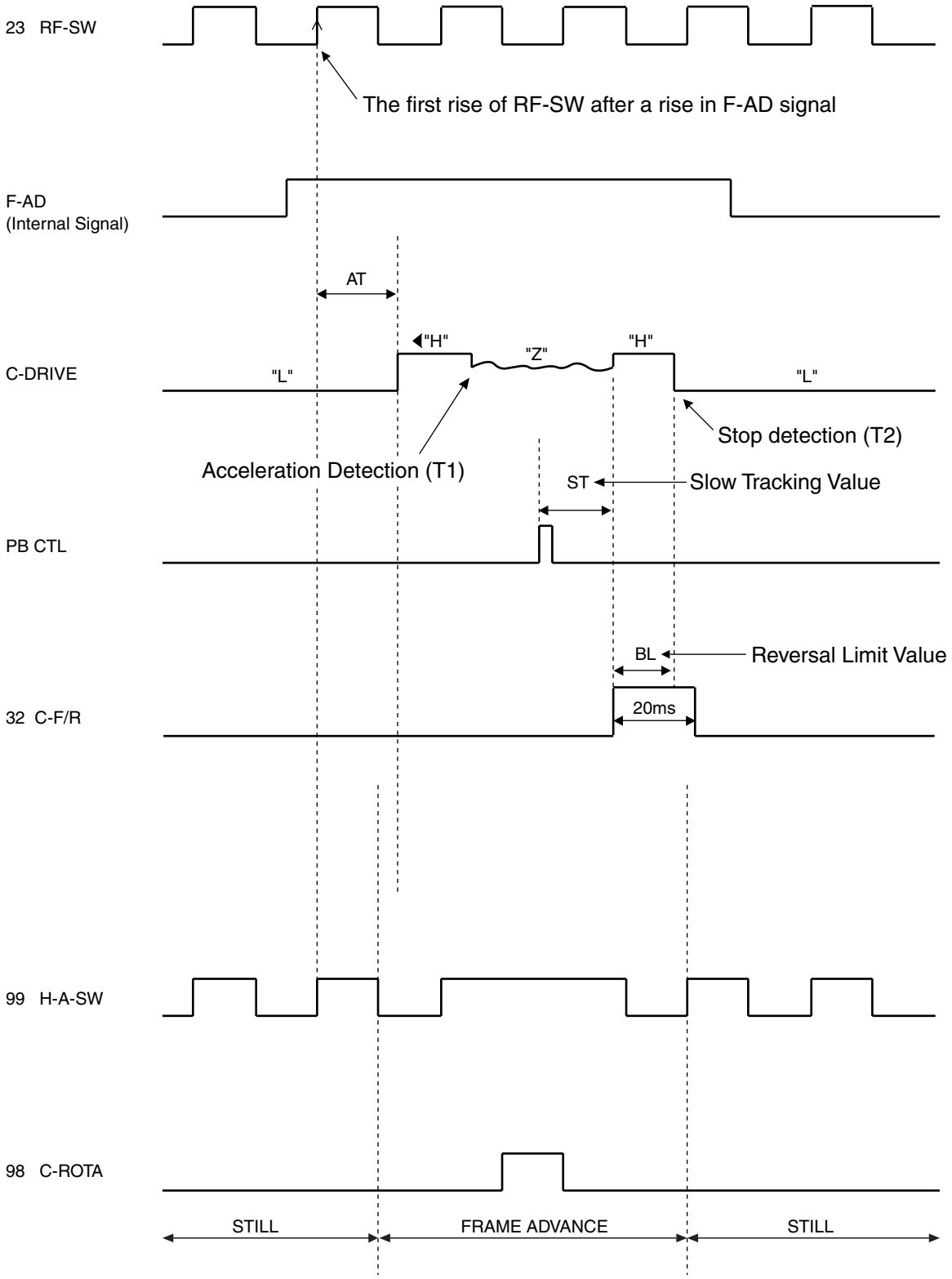


Fig. 2

1. EJECT (POWER OFF) -> CASSETTE IN (POWER ON) -> STOP(B) -> STOP(A) -> PLAY -> RS -> FS -> PLAY -> STILL -> PLAY -> STOP(A)

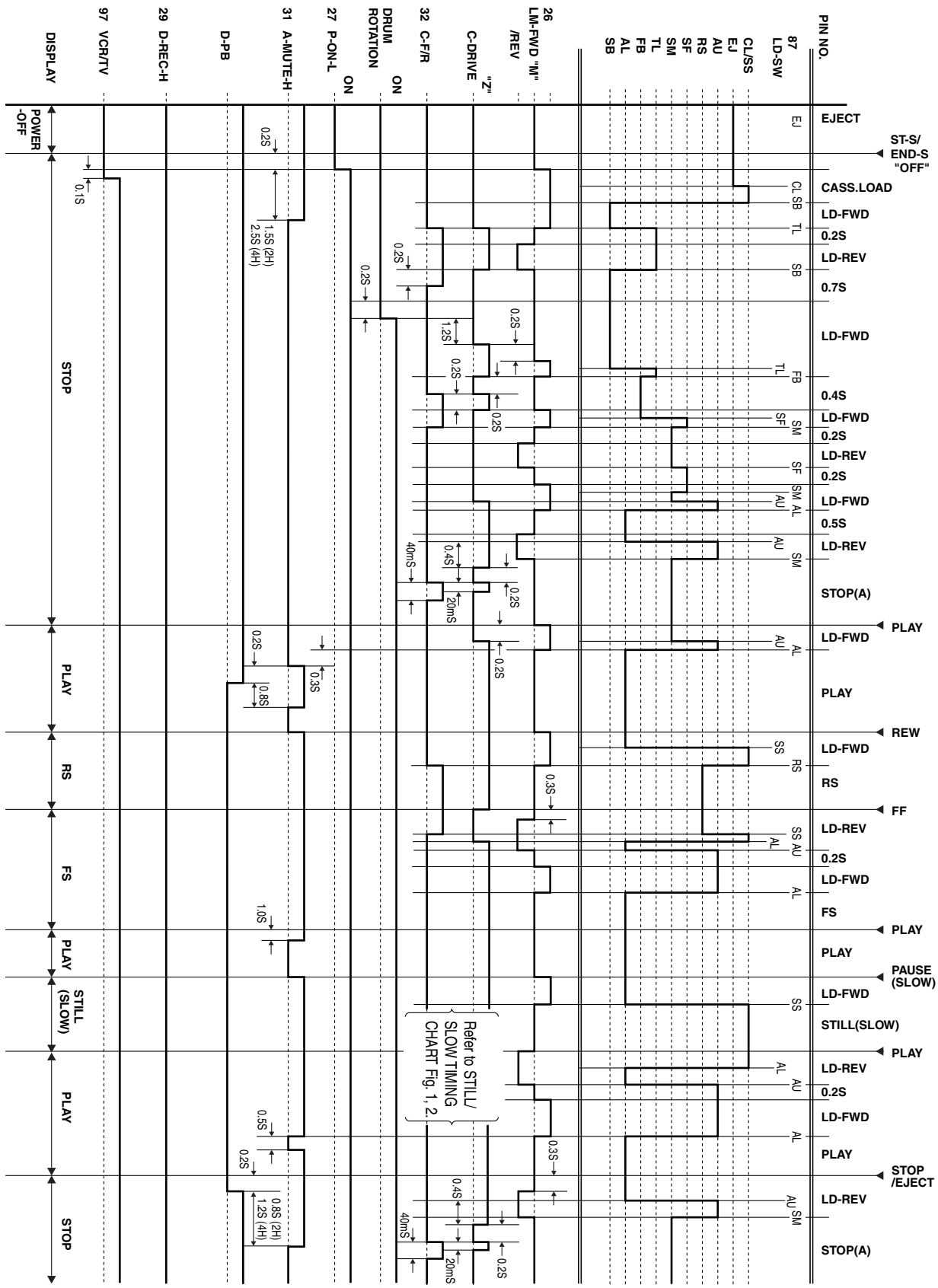


Fig. 3

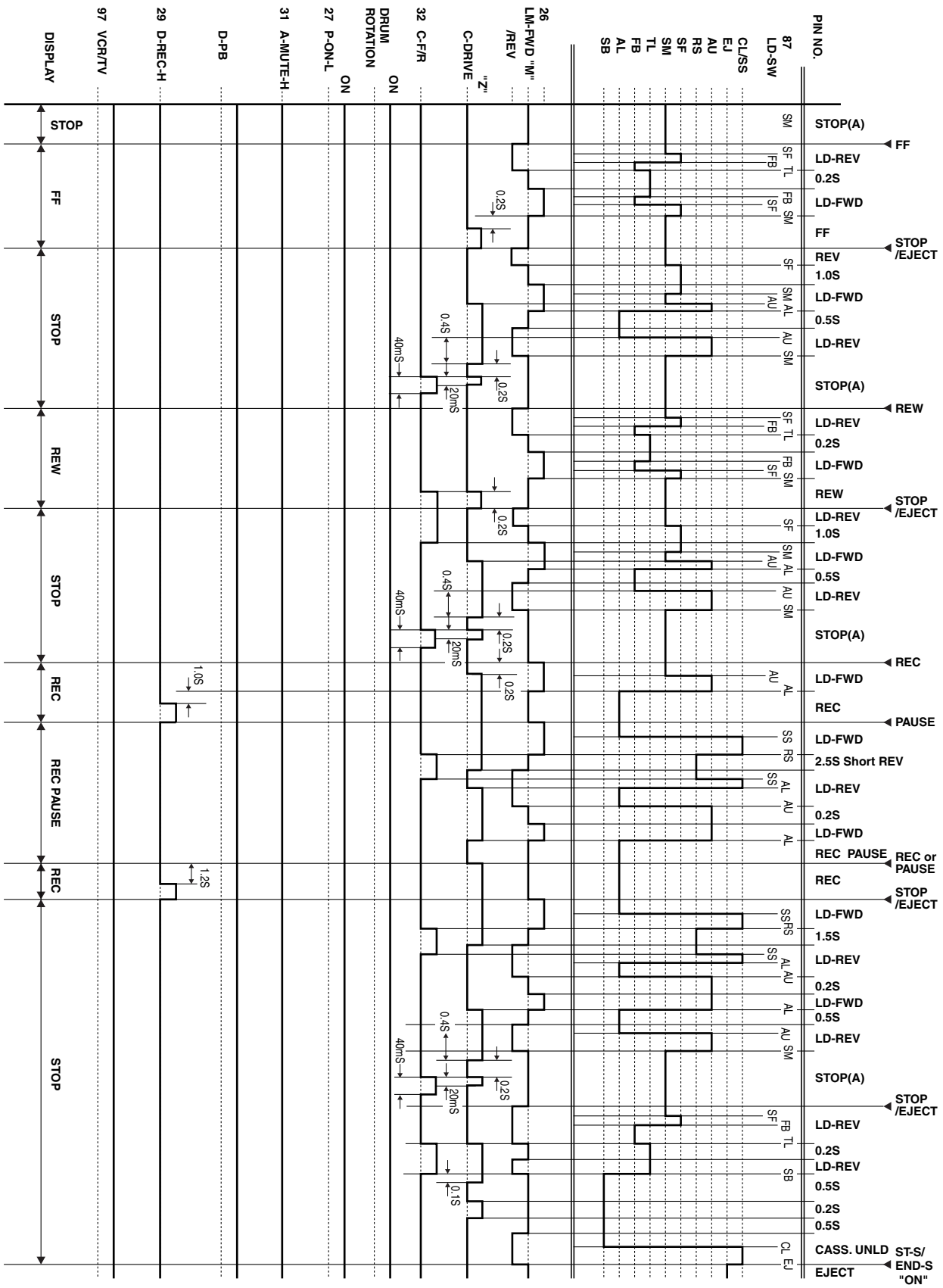
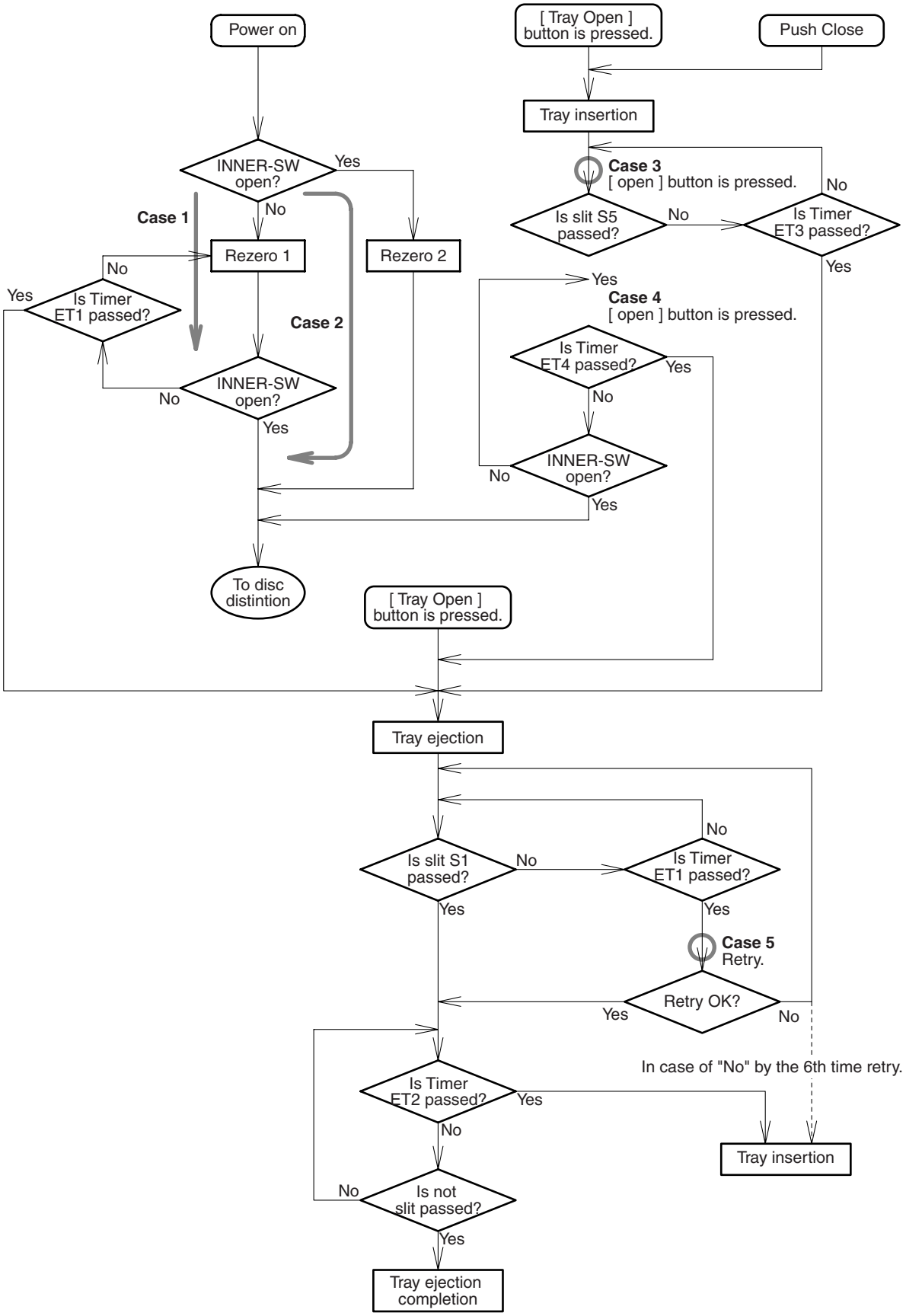

2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT
PIN NO.
87 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
26 LM-FWD "M" /REV
"Z" C-DRIVE
32 C-F/R
DRUM ROTATION
27 P-ON-L
31 A-MUTE-H
29 D-REC-H
D-PB
97 VCR/TV
DISPLAY
STOP(A)
FF
LD-REV
0.2S
LD-FWD
FF
STOP /EJECT
REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REW
LD-REV
0.2S
LD-FWD
REW
STOP /EJECT
LD-REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REC
LD-FWD
REC
PAUSE
LD-FWD
2.5S Short REV
LD-REV
0.2S
LD-FWD
REC PAUSE
REC or PAUSE
REC
STOP /EJECT
LD-FWD
1.5S
LD-REV
0.2S
LD-FWD
0.5S
LD-REV
STOP(A)
STOP /EJECT
LD-REV
0.2S
LD-REV
0.5S
0.2S
0.5S
CASS. UNLD
EJECT
ST-S/ END-S "ON"
STOP
FF
STOP
REW
STOP
REC
REC PAUSE
REC
STOP
0.2S
0.4S
40mS
20mS
1.0S
1.2S
0.1S

Fig. 4

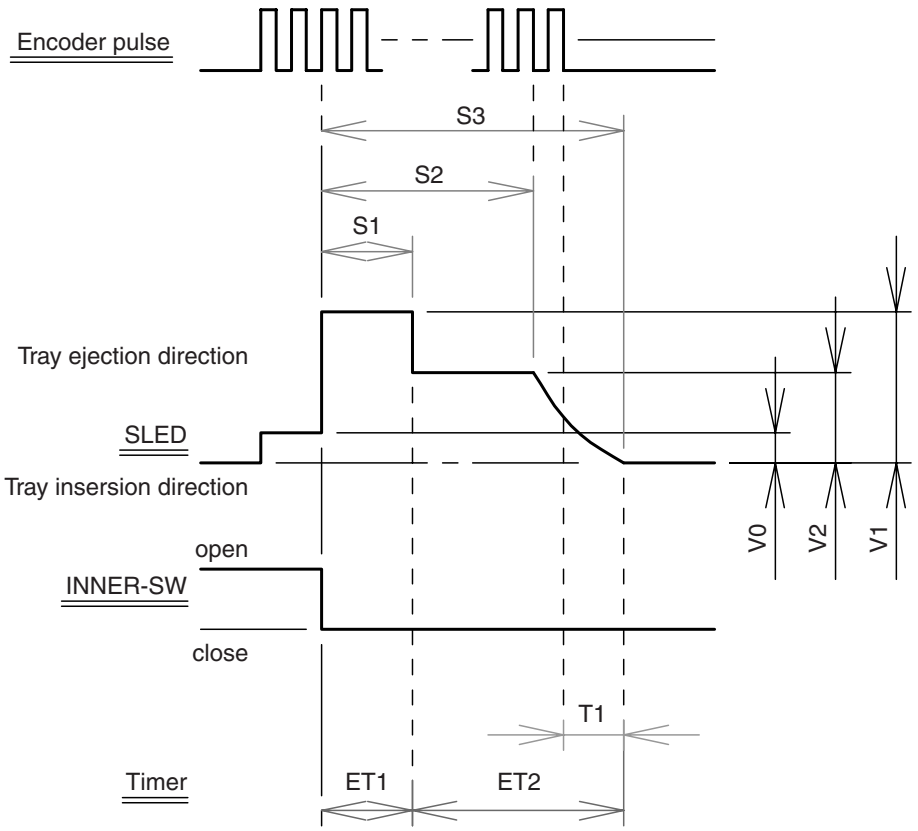
< DVD Section >


Power on
INNER-SW open?
Yes
No
Case 1
Rezero 1
Rezero 2
No
Yes
Is Timer ET1 passed?
Case 2
No
INNER-SW open?
Yes
To disc distintion
[Tray Open] button is pressed.
Push Close
Tray insertion
Case 3
[open] button is pressed.
No
Is slit S5 passed?
No
Is Timer ET3 passed?
Yes
Yes
Case 4
[open] button is pressed.
Is Timer ET4 passed?
Yes
No
No
INNER-SW open?
Yes
[Tray Open] button is pressed.
Tray ejection
No
Is slit S1 passed?
No
Is Timer ET1 passed?
Yes
Yes
Case 5
Retry.
Retry OK?
Yes
No
In case of "No" by the 6th time retry.
Is Timer ET2 passed?
Yes
No
Tray insertion
No
Is not slit passed?
Yes
Tray ejection completion

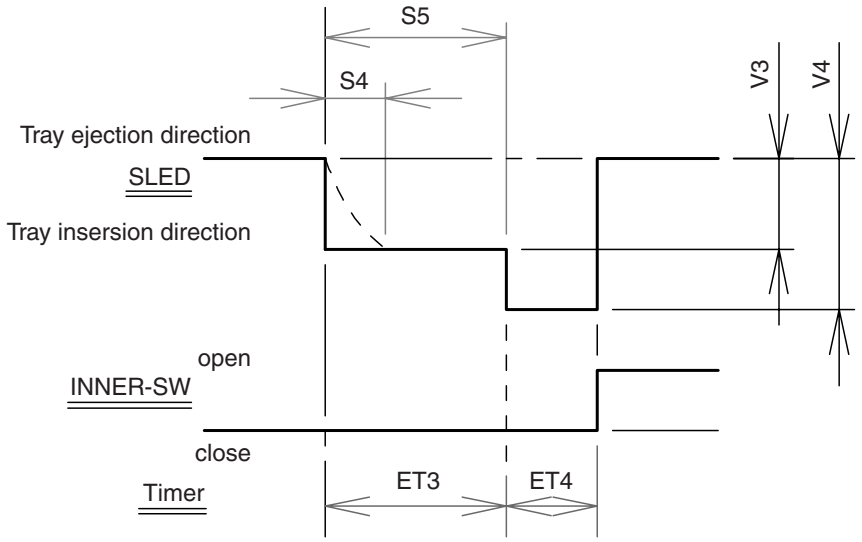
Parameter

V*: Voltage (HEX)	S*: Encoder pulse (HEX)	T*: Event timer	ET*: Error detection timer
V0: 2.0 V (00d)	S1: 300 (12c)	T1: 0.1 s	ET1: 5.0 s
V1: 4.5 V (022)	S2: 3300 (ce4)	T2: 3.0 s	ET2: 5.0 s
V2: 2.2 V (010)	S3: 3935 (f5f)	T3: 3.0 s	ET3: 3.0 s
V3: 2.4 V (013)	S4: 0 (000)	T4: 0.1 s	ET4: 3.0 s
V4: 6.0 V (030)	S5: 3000 (bb8)	T5: 0.1 s	

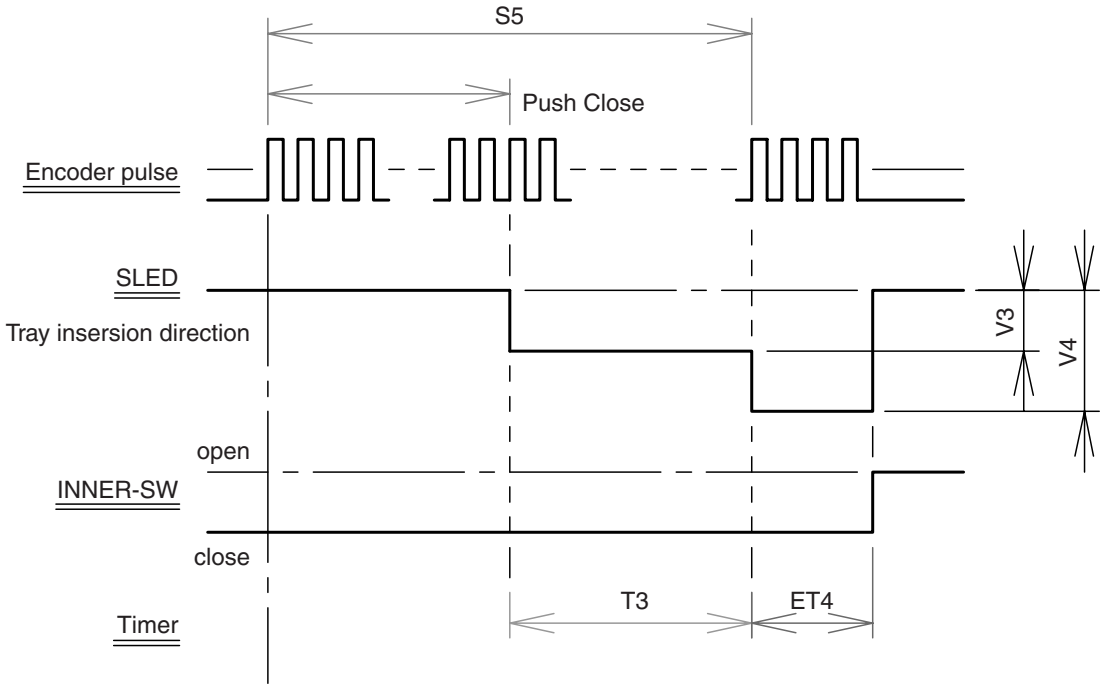
Tray open



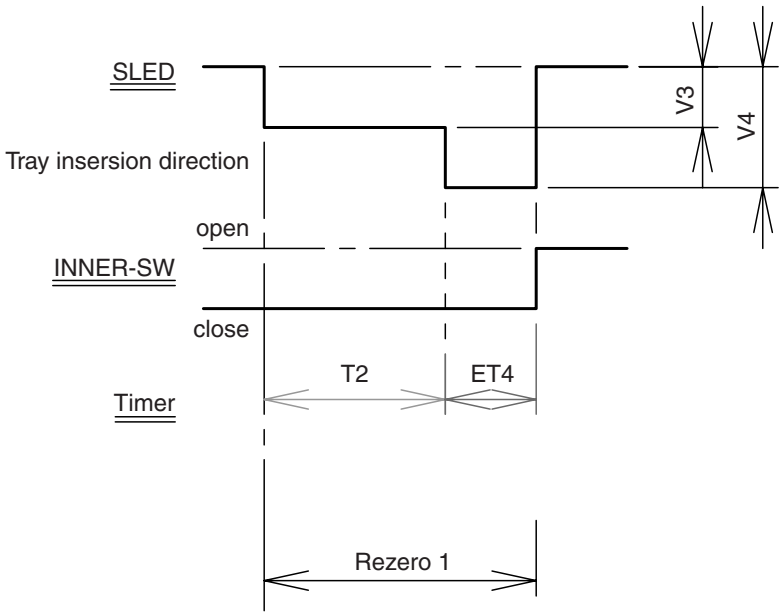
Tray close



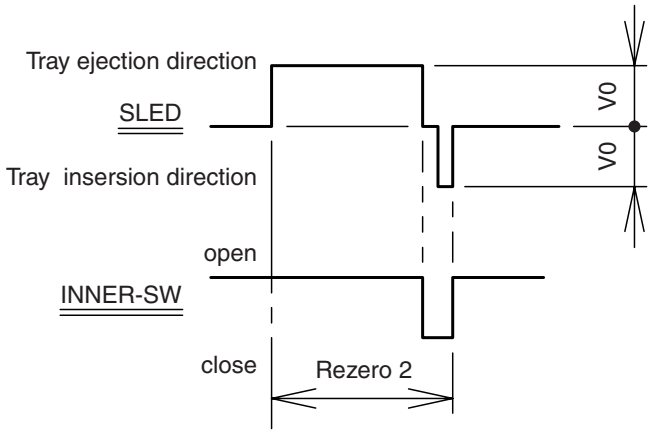
Push close



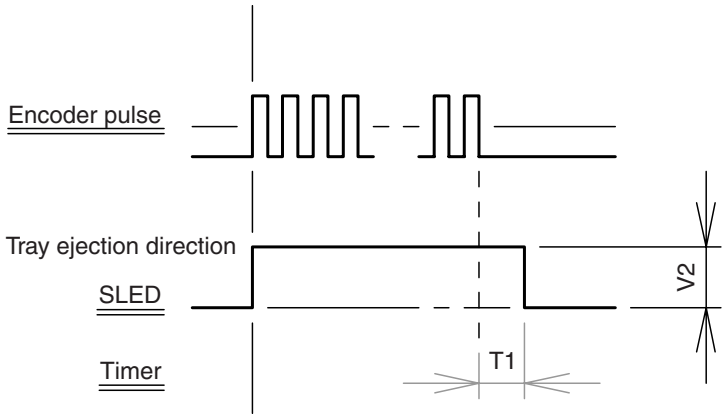
Case 1



Case 2



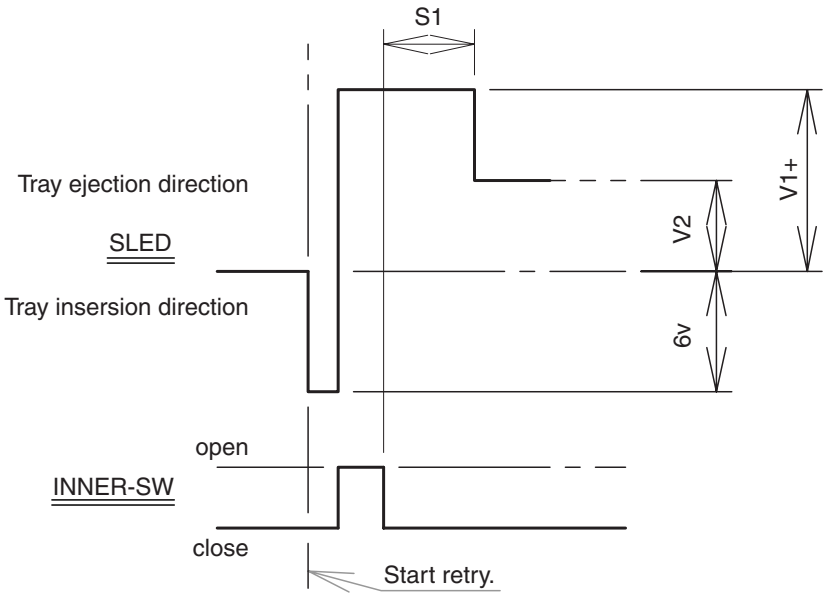
Case 3 (When [OPEN] button is pressed before the S5 passage.)



Case 4 (When [OPEN] button is pressed after the S5 passage.)

It starts opening after making closing complete once.

Case 5 (Retry.)



Retry frequency	V1+
1st time retry	6 v
2nd time retry	7 v
3rd time retry	8 v
4th time retry	9 v
5th time retry	9 v
6th time retry	9 v

IC PIN FUNCTION DESCRIPTIONS

< VCR Section >

IC501 (SERVO/SYSTEM CONTROL/OSD)

"H" ≥ 4.5 V, "L" ≤ 1.0 V

Pin No.	IN/ OUT	Signal Name	Function
1	IN	P-DOWN -H	Power Voltage Down Detector Signal
2	IN	READY/ BUSY	Ready/Busy Communication Control with Main Micro Controller
3	IN	T-REEL	Take Up Reel Rotation Signal
4	-	N.U.	Not Used
5	IN	REMOCON -IN	Remote Control Sensor
6	OUT	DISPLAY-ENA	FL Display Driver IC Enable Control Output Signal
7	OUT	DISPLAY-DATA	FL Display Driver IC Data Control Output Signal
8	OUT	DISPLAY-CLK	FL Display Driver IC Clock Control Output Signal
9	-	N.U.	Not Used
10	IN	SYS-RESET	System Reset Signal (Reset="L")
11	OUT	S-CLK	Communication of Clock with VCR Micro Controller
12	OUT	S-DATA-IN	Communication of Data to VCR Micro Controller
13	IN	S-DATA-OUT	Communication of Data from VCR Micro Controller
14	-	N.U.	Not Used
15	OUT	REG-CONT2	Regulator Control Signal
16	-	N.U.	Not Used
17	IN/ OUT	IIC-BUS-SDA	IIC BUS Control Data
18	OUT	IIC-BUS-SCL	IIC BUS Control Clock
19	OUT	YCA-CLK	YCA IC Control Clock
20	OUT	YCA-DATA	YCA IC Control Data
21	OUT	YCA-CS	YCA IC Control Chip Select
22	IN	REC-SAF-SW	Recording Safety SW Detect (With Record tab = "L"/ With out Record tab = "H")
23	OUT	RF-SW	Video Head Switching Pulse
24	OUT	D-V SYNC	Dummy V-sync Output
25	IN	RESET	System Reset Signal (Reset="L")
26	OUT	LM-FWD/ REV	Loading Motor FWD/ REV Output
27	OUT	P-ON-L	Power On Signal to Low
28	-	N.U.	Not Used
29	OUT	D-REC	Delayed Record Signal
30	OUT	Hi-Fi-H-SW	Hi-Fi Audio Head Switching Pulse
31	OUT	VCR-AUDIO-MUTE	VCR Audio Mute Control Signal
32	OUT	C-F/R	Capstan Motor FWD/REV Control Signal (FWD="L"/ REV="H")
33	OUT	C-CONT	Capstan Motor Control Signal
34	OUT	D-CONT	Drum Motor Control Signal
35	-	N.U.	Not Used
36	-	VDD	VDD (AL+5V)
37	OUT	OSCO	Main Clock Output 14.31818MHz
38	IN	OSCI	Main Clock Input 14.31818MHz
39	-	VSS	VSS (GND)
40	IN	XI	Main Clock Input
41	OUT	XO	Main Clock Output
42	IN	SXI	Operation Mode Selecting Input Signal
43	-	N.U.	Not Used
44	-	N.U.	Not Used
45	-	N.U.	Not Used
46	OUT	REG-CONT	Power Regulator Control Signal
47	OUT	VIDEO-OUT	Composite Video Signal Output
48	-	Vss	VSS (GND)
49	IN	VIDEO-IN	Composite Video Signal Input
50	IN	C-SYNC-IN	Composite Synchronized Pulse

Pin No.	IN/ OUT	Signal Name	Function
51	-	VDD2	VDD2 (AL+5V)
52	IN	AFCC	Low Path Filter Input Signal For AFC
53	OUT	AFCLPF	Low Path Filter Output Signal For AFC
54	OUT	VIDEO-MUTE	Video Mute Control Signal
55	OUT	OUTPUT-SELECT	Output Select (DVD="L"/ VCR="H")
56	OUT	DVD-AUDIO-MUTE	DVD Audio Mute Control Signal
57	OUT	VIDEO-SW3	Video Switching Signal 3
58	OUT	VIDEO-SW2	Video Switching Signal 2
59	OUT	VIDEO-SW1	Video Switching Signal 1
60	OUT	AUDIO-SW2	Audio Switching Signal 2
61	OUT	AUDIO-SW1	Audio Switching Signal 1
62	-	N.U.	Not Used
63	-	N.U.	Not Used
64	-	N.U.	Not Used
65	IN	D-PFG	Drum PG/FG Input Signal
66	-	N.U.	Not Used
67	IN	C-FG	Capstan Motor Rotation Detection Pulse
68	-	AFG	GND
69	OUT	VRO	Servo Standard Voltage Output
70	IN	VRI	Servo Standard Voltage Input
71	-	AVss	AVSS (GND)
72	IN	CTLA	CTL Amp. AC GND
73	IN	ADVV	Power Supply
74	IN/ OUT	CTL (+)	Playback/Record Control Signal (+)
75	IN/ OUT	CTL (-)	Playback/Record Control Signal (-)
76	OUT	CTL	Amp. Output Control Signal for Test Point
77	OUT	POWER-LED	Power LED Signal Output
78	IN	Hi-Fi/ NOR-IN	Audio Mode Input HiFi="L"/ Normal="H"
79	IN	DVD POWER-SAFETY	DVD Power Supply Safety Signal
80	IN	VCR POWER-SAFETY	VCR Power Supply Safety Signal
81	IN	END-S	Tape End Position Detect Signal
82	IN	AFC	Automatic Frequency Control Signal
83	IN	V-ENV	Video Envelope Comparator Signal
84	IN	PG-DELAY	Video Head Switching Pulse Signal Adjusted Voltage
85	IN	KEY-2	A/D Key Data Signal 2
86	IN	KEY-1	A/D Key Data Signal 1
87	IN	LD-SW	Deck Mode Position Detector Signal
88	IN	ST-S	Tape Start Position Detector Signal
89	IN	FAN-LOCK	Fan Motor Lock Detection
90	-	N.U.	Not Used
91	OUT	FAN-CONT1	Fan Motor Control Signal
92	-	N.U.	Not Used
93	-	N.U.	Not Used
94	OUT	VCR-LED	VCR Mode LED Signal Output
95	OUT	DVD-LED	DVD Mode LED Signal Output
96	OUT	CONV-SW	RF Conv. Output Channel Switching Signal 3ch="Hi-z", 4ch="L"
97	OUT	TV/VCR	RF Conv. ON/OFF Signal
98	OUT	C-ROTA	Color Phase Rotary Changeover Signal
99	OUT	H-A-SW	Video Head Amp Switching Pulse
100	IN	H-A-COMP	Head Amp Comparator Signal

Notes:

Abbreviation for Active Level:

PWM ----- Pulse Wide Modulation

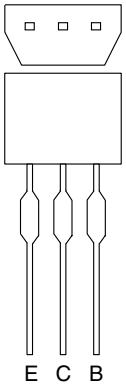
A/D -------- Analog - Digital Converter

< DVD Section >

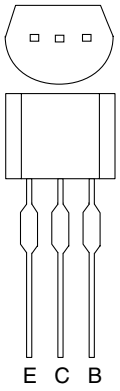
IC571 (FIP DRIVER IC)

Pin No.	IN/ OUT	Signal Name	Function
1	IN	CLK	Clock Input
2	IN	STB	Serial Interface Strobe
3	-	N.U.	Not Used
4	-	N.U	Not Used
5	-	VSS	GND
6	-	VDD	Power Supply
7	OUT	a	Segment Output
8	OUT	b	
9	OUT	c	
10	OUT	d	
11	OUT	e	
12	IN	f	
13	IN	g	
14	OUT	h	
15	-	VEE	Pull Down Level
16	OUT	i	Segment Output
17	OUT	7G	Grid Output
18		6G	
19		5G	
20		4G	
21		3G	
22		2G	
23		1G	
24	-	VDD	Power Supply
25	-	VSS	GND
26	IN	OSC	Oscillator Input
27	-	N.U.	Not Used
28	IN	DIN	Serial Data Input

LEAD IDENTIFICATIONS

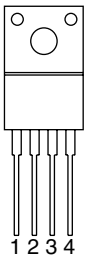


KRA103M
KRC103M
KTA1267(GR,Y)
KTC3193(Y)
KTC3199(BL,Y)
KTA1266(Y)

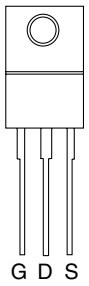


KTC3198(Y)
KTC3203(Y)
2SC3266-Y(TPE2 F)
2SC1815-Y(TPE2)

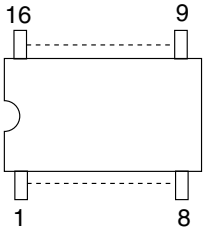
PQ070XF01SZH



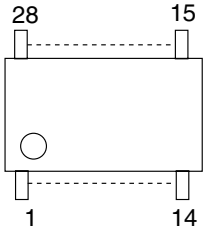
2SK3563



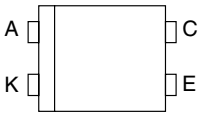
CD4052BNSR
CD4053BNSR



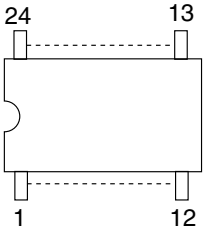
PT6313-S-TP(L)



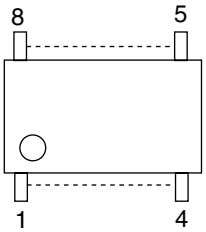
PS2561A-1(W)



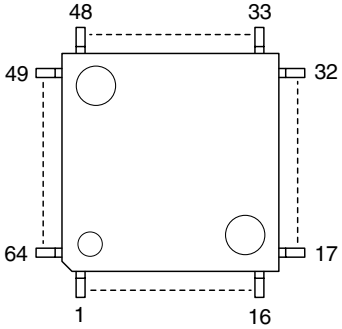
MM1697AJBE



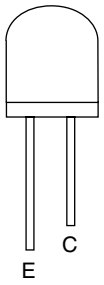
MM1636XWRE
KIA4558P/P
RC4580IP



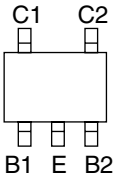
AN3663FBP-TV



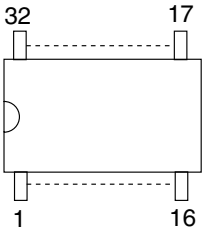
PT204-6B-12



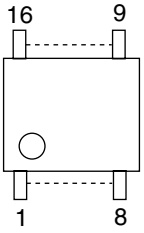
RN1511(TE85R)



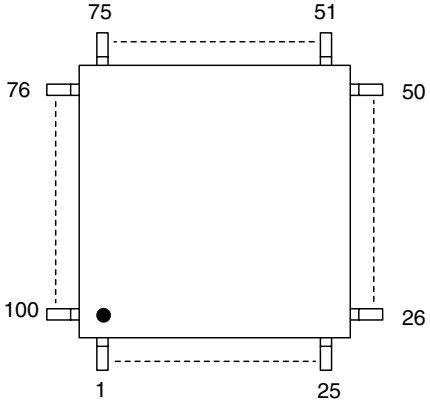
AN5832SA-E1



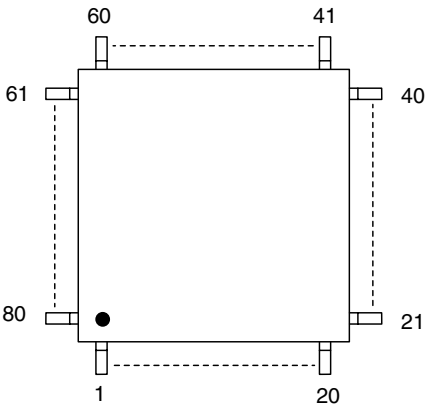
MM1637XVBE



MN101D10FER



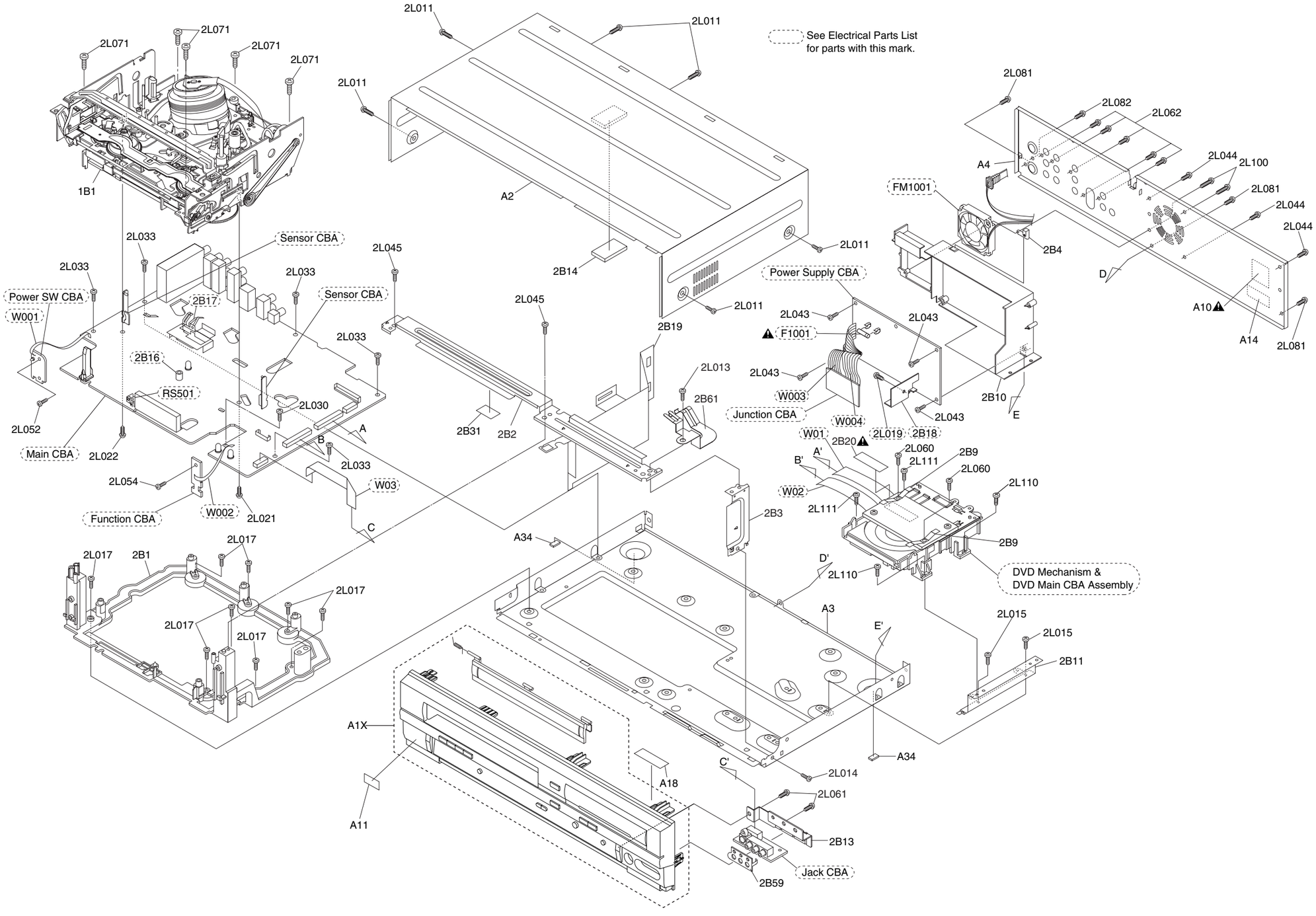
LA71205M-MPB-E



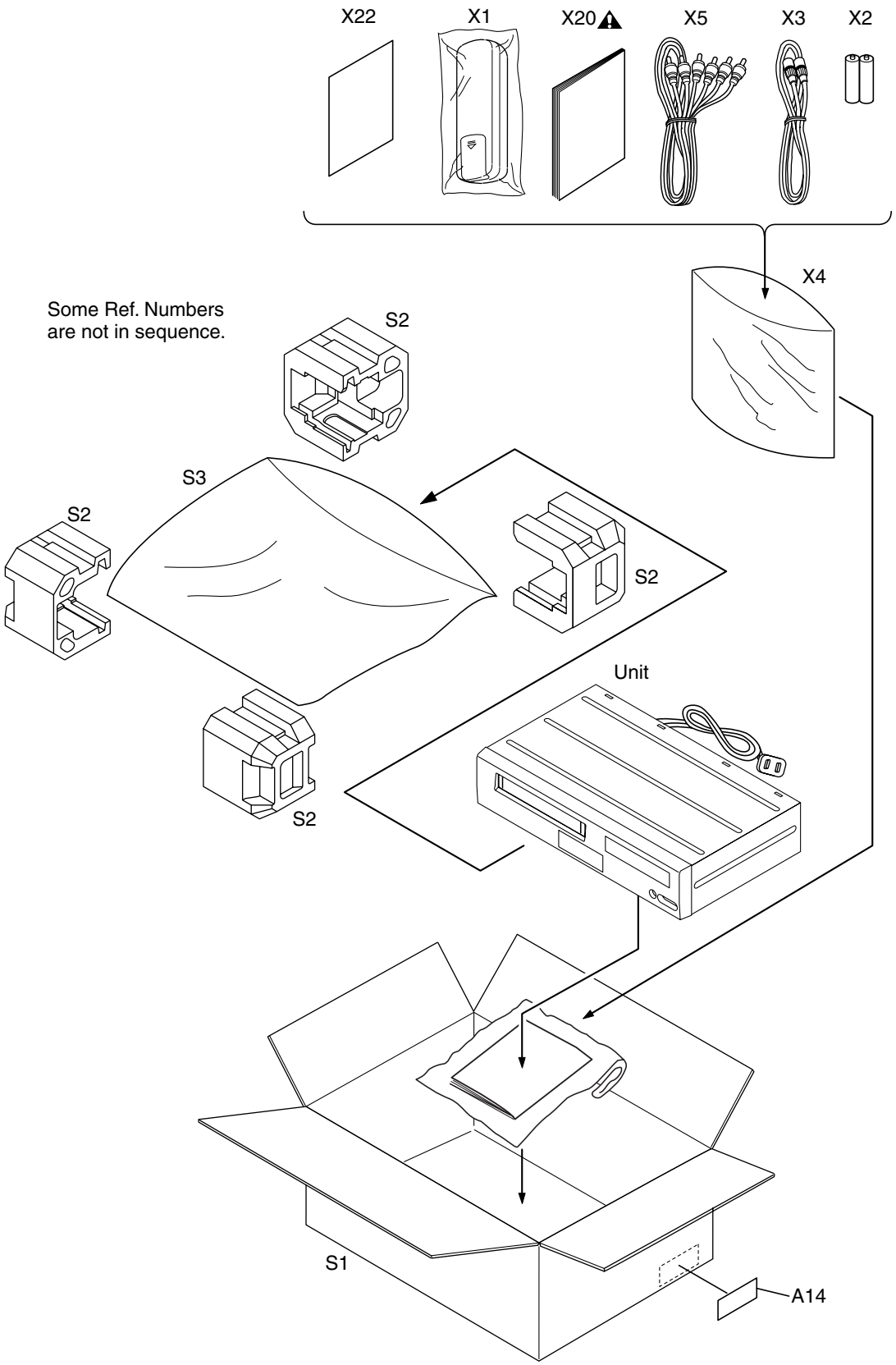
Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
S: Source
G: Gate
D: Drain

EXPLODED VIEWS

Cabinet



Packing


X22
X1
X20
X5
X3
X2
X4
Some Ref. Numbers
are not in sequence.
S2
S3
S2
S2
S2
Unit
S1
A14

MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTE: Parts that are not assigned part numbers (---------) are not available.

Ref. No.	Mark	Description	Part No.
A1X		FRONT ASSEMBLY E9610UD	1VM220345
A2		TOP COVER E9400UD	0VM101356
A3		MAIN CHASSIS E9400UD	0VM101353E
A4		REAR PANEL E9610UD	1VM220346
A10⚠		LABEL RATING(U) E9610UD	----------
A11		LABEL -RW/-R E6700UD	----------
A14		LABEL BAR CODE HB400UD	----------
A18		LABEL TELEPHONE NO.(SYMPHONIC) E9411UD	----------
A34		FOOT H5100UD	0VM406940
1B1		DECK ASSEMBLY CZD014/VM2460	N2460FL
2B1		DECK PEDESTAL E9600UD	1VM120055
2B2		FRONT BRACKET E9400UD	0VM204534A
2B3		FRONT BRACKET R E9400UD	0VM416269A
2B4		EARTH PLATE E9600UD	1VM421163
2B9		MECHA EARTH PLATE E9600UD	1VM421129
2B10		HOLDER PCB E9400UD	0VM101354C
2B11		BRACKET R E9600UD	1VM421062
2B13		JACK BRACKET E9400UD	0VM416273
2B14		CUSHION RUBBER E9400UD	0VM416664
2B19		RADIATION SHEET E9610UD	1VM320666
2B20⚠		CAUTION LABEL	----------
2B31		TAPE HIMELON H9206JD	0VM413956
2B59		JACK EARTH PLATE E9600UD	1VM320623
2B61		EARTH PLATE (TOP) E9610UD	1VM320888
2L011		SCREW C-TIGHT M3X5 BIND HEAD +	GBCC3050
2L013		SCREW S-TIGHT M3X6 BIND HEAD+	GBMS3060
2L014		SCREW S-TIGHT M3X6 BIND HEAD+	GBMS3060
2L015		SCREW S-TIGHT M3X5 BIND HEAD+	GBMS3050
2L017		SCREW S-TIGHT M3X8 BIND HEAD+	GBMS3080
2L021		SCREW P-TIGHT M3X8 BIND HEAD+	GBCP3080
2L022		SCREW S-TIGHT M3X6 BIND HEAD+	GBMS3060
2L030		P-TIGHT SCREW 3X8 BIND +	GBMP3080
2L033		SCREW S-TIGHT M3X6 BIND HEAD+	GBMS3060
2L043		P-TIGHT SCREW 3X8 BIND +	GBMP3080
2L044		P-TIGHT SCREW 3X8 BIND +	GBMP3080
2L045		P-TIGHT SCREW 3X8 BIND +	GBMP3080
2L052		SCREW P-TIGHT M3X6 BIND HEAD+	GBMP3060
2L054		SCREW P-TIGHT M3X6 BIND HEAD+	GBMP3060
2L060		P-TIGHT SCREW 3X8 BIND +	GBMP3080
2L061		SCREW P-TIGHT M3X6 BIND HEAD+	GBMP3060
2L062		SCREW B-TIGHT M3X8 BIND HEAD +	GBKB3080
2L071		SCREW P-TIGHT M3X10 WASHER HEAD+	GCMP3100
2L081		SCREW S-TIGHT M3X5 BIND HEAD +	GBKS3050
2L082		SCREW S-TIGHT M3X5 BIND HEAD +	GBKS3050
2L100		P-TIGHT SCREW M3X34 E9400UD	1VM420034A
2L110		SCREW S-TIGHT M3X10 BIND HEAD+	GBMS3100
2L111		SCREW P-TIGHT 3X12 BIND HEAD+	GBMP3120

Ref. No.	Mark	Description	Part No.
PACKING			
S1		GIFT BOX CARTON E9610UD	1VM320634
S2		STYROFOAM E9400UD	0VM101363
S3		SET BAG E7708UA	0DM400731A
ACCESSORIES			
X1		REMOTE CONTROL UNIT NB121UD	NB121UD
X2		DRY BATTERY R6P/2S	XB0M451T0001
X3		RF CABLE 2.5C-2V	WPZ0901TM002
X4		ACCESSORY BAG E5700UD	0VM415576
X5		AV CORD TSCKA-Y/RW100	WPZ0102TM015
X20⚠		OWNERS MANUAL E9610UD	1VMN20392
X22		QUICK GUIDE E9610UD	1VMN20397

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (---------) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25% D.....±0.5% F.....±1%

G.....±2% J.....±5% K.....±10%

M.....±20% N.....±30% Z.....+80/-20%

DVD MECHANISM & DVD MAIN CBA ASSEMBLY

Ref. No.	Mark	Description	Part No.
		DVD MECHANISM & DVD MAIN CBA ASSEMBLY	N78FABUN

MCV CBA ASSEMBLY

Ref. No.	Mark	Description	Part No.
		MCV CBA ASSEMBLY Consists of the following	1VSA11225
		MAIN CBA (MCV-A) POWER SW CBA (MCV-B) FUNCTION CBA (MCV-C) JACK CBA (MCV-D) SENSOR CBA	---------- ---------- ---------- ---------- 1VSA10080

MAIN CBA

Ref. No.	Mark	Description	Part No.
		MAIN CBA (MCV-A) Consists of the following	----------
		CAPACITORS	
C051		ELECTROLYTIC CAP. 10UF/16V M H7	CE1CMASSL100
C055		ELECTROLYTIC CAP. 47µF/16V M	CE1CMASDL470
C102		ELECTROLYTIC CAP. 47µF/16V M H7	CE1CMAVSL470
C213		CHIP CERAMIC CAP.(1608) B K 0.1µF/ 50V	CHD1JK30B104
C214		ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C215		CHIP CERAMIC CAP.(1608) B K 0.1µF/ 50V	CHD1JK30B104
C223		ELECTROLYTIC CAP. 100µF/6.3V M H7	CE0KMASSL101
C224		CHIP CERAMIC CAP.(1608) F Z 0.1µF/ 50V	CHD1JZ30F104
C227		ELECTROLYTIC CAP. 100µF/6.3V M H7	CE0KMASSL101
C228		CHIP CERAMIC CAP.(1608) F Z 0.1µF/ 50V	CHD1JZ30F104
C301		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C302		CHIP CERAMIC CAP.(1608) CH J 390pF/ 50V	CHD1JJ3CH391
C303		PCB JUMPER D0.6-P5.0	JW5.0T
C304		CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V	CHD1JJ3CH101
C305		CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V	CHD1JJ3CH101
C307		CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C308		ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C309		CHIP CERAMIC CAP.(1608) F Z 0.1µF/ 50V	CHD1JZ30F104
C310		ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C311		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C312		CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C313		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C314		CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C315		CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C316		CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C317		CHIP CERAMIC CAP.(1608) B K 1µF/10V	CHD1AK30B105
C318		ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C319		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C320		CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C321		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C324		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C327		ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C328		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C329		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C330		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C331		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C332		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C333		CHIP CERAMIC CAP.(1608) F Z 0.1µF/ 50V	CHD1JZ30F104
C336		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C339		CHIP CERAMIC CAP.(1608) B K 0.047µF/ 50V	CHD1JK30B473
C340		CHIP CERAMIC CAP.(1608) B K 0.1µF/ 50V	CHD1JK30B104
C341		CHIP CERAMIC CAP.(1608) B K 0.047µF/ 50V	CHD1JK30B473
C342		CHIP CERAMIC CAP.(1608) F Z 0.1µF/ 50V	CHD1JZ30F104
C343		ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C346		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C391		ELECTROLYTIC CAP. 100µF/10V M	CE1AMASDL101
C392		ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASDL471
C401		CHIP CERAMIC CAP.(1608) F Z 0.1µF/ 50V	CHD1JZ30F104
C404		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C405		ELECTROLYTIC CAP. 22µF/6.3V M H7	CE0KMAVSL220
C406		ELECTROLYTIC CAP. 33µF/6.3V M H7	CE0KMAVSL330
C407		CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V	CHD1JK30B103
C408		CHIP CERAMIC CAP.(1608) B K 0.012µF/ 50V	CHD1JK30B123
C409		ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C410		CHIP CERAMIC CAP.(1608) B K 2700pF/ 50V	CHD1JK30B272
C411		CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V	CHD1JK30B102
C412		ELECTROLYTIC CAP. 4.7µF/25V M H7	CE1EMAVSL4R7
C413		CHIP CERAMIC CAP.(1608) B K 6800pF/ 50V	CHD1JK30B682
C422		ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C423		ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221

Ref. No.	Mark	Description	Part No.
C424		CERAMIC CAP. B K 470pF/500V	CCD2JKS0B471
C425		FILM CAP.(P) 0.018μF/100V J	CMA2AJS00183
C438		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMAVSL4R7
C439		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMASSL4R7
C448		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C449		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMASSL100
C450		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C451		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C452		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C453		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C454		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C455		ELECTROLYTIC CAP. 33μF/6.3V M H7	CE0KMAVSL330
C456		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C457		ELECTROLYTIC CAP. 22μF/6.3V M H7	CE0KMAVSL220
C458		FILM CAP.(P) 0.015μF/50V J	CA1J153MS029
C460		CERAMIC CAP.(AX) B K 0.033μF/50V	CA1J333TU011
C461		CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C462		CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C463		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C464		ELECTROLYTIC CAP. 0.22μF/50V M H7	CE1JMAVSLR22
C465		CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C466		ELECTROLYTIC CAP. 47μF/16V M H7	CE1CMAVSL470
C467		CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V	CHD1JK30B223
C468		FILM CAP.(P) 0.015μF/50V J	CA1J153MS029
C470		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C471		ELECTROLYTIC CAP. 22μF/6.3V M H7	CE0KMAVSL220
C472		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C473		ELECTROLYTIC CAP. 33μF/6.3V M H7	CE0KMAVSL330
C474		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C478		ELECTROLYTIC CAP. 47μF/16V M H7	CE1CMAVSL470
C480		ELECTROLYTIC CAP. 22μF/6.3V M H7	CE0KMAVSL220
C481		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C483		ELECTROLYTIC CAP. 3.3μF/50V M H7	CE1JMAVSL3R3
C490		ELECTROLYTIC CAP. 2.2μF/50V M H7	CE1JMAVSL2R2
C491		CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V	CHD1JK30B223
C493		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C494		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C498		ELECTROLYTIC CAP. 47μF/16V M H7	CE1CMAVSL470
C502		ELECTROLYTIC CAP. 220μF/6.3V M H7	CE0KMAVSL221
C505		ELECTROLYTIC CAP. 22μF/10V M H7	CE1AMAVSL220
C507		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C508		CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V	CHD1JK30B223
C509		ELECTROLYTIC CAP. 220μF/6.3V M H7	CE0KMAVSL221
C513		CHIP CERAMIC CAP.(1608) CH D 10pF/ 50V	CHD1JD3CH100
C514		CHIP CERAMIC CAP.(1608) CH J 22pF/ 50V	CHD1JJ3CH220
C515		CHIP CERAMIC CAP. CH J 18pF/50V	CHD1JJ3CH180
C521		ELECTROLYTIC CAP. 47μF/25V M H7	CE1EMAVSL470
C522		CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V	CHD1JK30B472
C523		CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V	CHD1JJ3CH101
C525		CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V	CHD1JK30B472
C527		CHIP CERAMIC CAP.(1608) B K 0.047μF/ 50V	CHD1JK30B473
C529		CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V	CHD1JK30B223

Ref. No.	Mark	Description	Part No.
C530		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C531		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C532		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C533		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMAVSL470
C534		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C535		ELECTROLYTIC CAP. 22μF/10V M H7	CE1AMAVSL220
C536		CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V	CHD1JK30B102
C537		CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V	CHD1JK30B102
C540		CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C544		ELECTROLYTIC CAP. 220μF/6.3V M H7	CE0KMAVSL221
C550		ELECTROLYTIC CAP. 22μF/50V M H7	CE1JMASSL220
C585		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C586		ELECTROLYTIC CAP. 100μF/6.3V M H7	CE0KMASSL101
C587		CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V	CHD1JK30B472
C588		ELECTROLYTIC CAP. 100μF/6.3V H7	CE0KMAVSL101
C706		CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C751		CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V	CHD1JK30B102
C752		CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V	CHD1JK30B102
C762		ELECTROLYTIC CAP. 4.7μF/50V M H7	CE1JMAVSL4R7
C766		CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C777		ELECTROLYTIC CAP. 4.7μF/50V M H7	CE1JMAVSL4R7
C814		ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C818		CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C819		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C820		ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C821		ELECTROLYTIC CAP. 22μF/16V M H7	CE1CMAVSL220
C822		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C823		ELECTROLYTIC CAP. 2.2μF/50V M H7	CE1JMAVSL2R2
C825		ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C826		ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C827		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C828		ELECTROLYTIC CAP. 100μF/6.3V H7	CE0KMAVSL101
C829		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C835		ELECTROLYTIC CAP. 470μF/6.3V M	CE0KMASDL471
C839		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C840		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C841		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C844		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C845		CHIP CERAMIC CAP.(1608) CH J 270pF/ 50V	CHD1JJ3CH271
C846		ELECTROLYTIC CAP. 470μF/6.3V M	CE0KMASDL471
C847		CHIP CERAMIC CAP.(1608) CH J 47pF/ 50V	CHD1JJ3CH470
C848		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C850		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C851		CHIP CERAMIC CAP.(1608) CH J 270pF/ 50V	CHD1JJ3CH271
C852		CHIP CERAMIC CAP.(1608) CH J 47pF/ 50V	CHD1JJ3CH470
C853		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C854		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C863		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMAVSL4R7
C864		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMAVSL4R7

Ref. No.	Mark	Description	Part No.
C900		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C901		ELECTROLYTIC CAP. 0.33μF/50V M H7	CE1JMAVSLR33
C902		ELECTROLYTIC CAP. 3.3μF/25V M H7	CE1EMAVSL3R3
C903		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C904		CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V	CHD1JK30B223
C905		ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C906		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C907		CHIP CERAMIC CAP.(1608) B K 0.033μF/ 50V	CHD1JK30B333
C908		ELECTROLYTIC CAP. 2.2μF/50V M H7	CE1JMAVSL2R2
C909		ELECTROLYTIC CAP. 2.2μF/50V M H7	CE1JMAVSL2R2
C910		ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C911		ELECTROLYTIC CAP. 4.7μF/50V M H7	CE1JMAVSL4R7
C912		ELECTROLYTIC CAP. 2.2μF/50V M H7	CE1JMAVSL2R2
C913		ELECTROLYTIC CAP. 2.2μF/50V M H7	CE1JMAVSL2R2
C916		CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C917		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C918		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C919		ELECTROLYTIC CAP. 0.33μF/50V M H7	CE1JMAVSLR33
C920		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C922		ELECTROLYTIC CAP. 2.2μF/50V M H7	CE1JMAVSL2R2
C923		ELECTROLYTIC CAP. 0.22μF/50V M	CE1JMASDLR22
C925		ELECTROLYTIC CAP. 0.47μF/50V M H7	CE1JMAVSLR47
C926		ELECTROLYTIC CAP. 100μF/6.3V H7	CE0KMAVSL101
C927		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C928		CHIP CERAMIC CAP.(1608) CH J 47pF/ 50V	CHD1JJ3CH470
C1323		CHIP CERAMIC CAP.(1608) F Z 0.1μF/ 50V	CHD1JZ30F104
C1325		CHIP CERAMIC CAP.(1608) CH J 33pF/ 50V	CHD1JJ3CH330
C1333		CHIP CERAMIC CAP.(1608) CH J 33pF/ 50V	CHD1JJ3CH330
C1335		CHIP CERAMIC CAP.(1608) F Z 0.1μF/ 50V	CHD1JZ30F104
C1351		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C1352		CHIP CERAMIC CAP.(1608) B K 1μF/10V	CHD1AK30B105
C1354		CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V	CHD1JJ3CH101
C1401		CHIP CERAMIC CAP.(1608) B K 0.1μF/ 50V	CHD1JK30B104
C1403		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASSL1R0
C1421		CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C1423		CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C1441		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL1R0
C1442		ELECTROLYTIC CAP. 470μF/6.3V M	CE0KMASDL471
C1443		ELECTROLYTIC CAP. 470μF/6.3V M	CE0KMASDL471
C1461		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMAVSL1R0
C1462		ELECTROLYTIC CAP. 470μF/6.3V M	CE0KMASDL471
C1481		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL1R0
C1482		ELECTROLYTIC CAP. 470μF/6.3V M	CE0KMASDL471
C1522		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMAVSL100
C1523		CHIP CERAMIC CAP.(1608) F Z 0.1μF/ 50V	CHD1JZ30F104
C1524		ELECTROLYTIC CAP. 100μF/6.3V H7	CE0KMAVSL101
C1531		CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C1532		ELECTROLYTIC CAP. 22μF/6.3V M H7	CE0KMAVSL220
C1535		CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V	CHD1JK30B103
C1536		ELECTROLYTIC CAP. 22μF/6.3V M H7	CE0KMAVSL220
C1537		CHIP CERAMIC CAP.(1608) F Z 0.1μF/ 50V	CHD1JZ30F104
CONNECTORS			
CN101		CONNECTOR BASE 18P TUC-P18P-B1	J3TUA18TG001
CN102		PH CONNECTOR TOP 2P B2B-PH-K-S	J3PHC02JG001
CN201		FMN CONNECTOR TOP 30P 30FMN-BTRK	JCFNG30JG002
CN1609		FE CONNECTOR TOP 8P 08FE-BT-VK-N	JCFEJ08JG001
CN2204		FMN CONNECTOR TOP 30P 30FMN-BTRK	JCFNG30JG002
DIODES			
D052		ZENER DIODE DZ-10BSBT265	NDTB00DZ10BS
D080		RECTIFIER DIODE 1N4005	NDQZ001N4005
D081		RECTIFIER DIODE 1N4005	NDQZ001N4005
D082		PCB JUMPER D0.6-P10.0	JW10.0T
D083		ZENER DIODE DZ-18BSBT265	NDTB00DZ18BS
D100		SWITCHING DIODE 1N4148M	NDTZ01N4148M
D101		SWITCHING DIODE 1N4148M	NDTZ01N4148M
D106		ZENER DIODE DZ-4.3BSCT265	NDTC0DZ4R3BS
D107		RECTIFIER DIODE 1N4005	NDQZ001N4005
D108		SWITCHING DIODE 1N4148M	NDTZ01N4148M
D109		SWITCHING DIODE 1N4148M	NDTZ01N4148M
D221		SWITCHING DIODE 1N4148M	NDTZ01N4148M
D222		PCB JUMPER D0.6-P5.0	JW5.0T
D223		SWITCHING DIODE 1N4148M	NDTZ01N4148M
D451		SWITCHING DIODE 1N4148M	NDTZ01N4148M
D501		SWITCHING DIODE 1N4148M	NDTZ01N4148M
D555		LED MIE-534A2	NPZZM1E534A2
D562		LED(GREEN) 204-10GD/S957	NPQZ10GDS957
D563		LED(GREEN) 204-10GD/S957	NPQZ10GDS957
D701		ZENER DIODE DZ-33BSDT265	NDTD00DZ33BS
D801		ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D802		ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D805		ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D806		ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D807		ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D808		ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D1603		RECTIFIER DIODE 1N4005	NDQZ001N4005
D1604		RECTIFIER DIODE 1N4005	NDQZ001N4005
ICS			
IC301		IC Y/C/A LA71205M-MPB-E	QSZBA0RSY037
IC451		IC HIFI AN3663FBP-TV	QSZBA0RMS035
IC501		SYSCON IC MN101D10FER	QSZAA0RMS040
IC571		VFD DRIVER/CONTROLLER IC PT6313-S-TP(L)	NSZBA0TG2007
IC800		IC SWITCHING CD4052BNSR	NSZBA0TTY091
IC803		IC OP AMP RC4580IP	NSZBA0STY173
IC804		IC OP AMP KIA4558P/P	NSZBA0SJY035
IC805		VIDEO SWITCH MM1697AJBE	QSZBA0TMM150
IC900		IC MTS DECORDER AN5832SA-E1	QSZBA0TMS003
IC1404		DRIVER FOR DVD MM1636XWRE	QSZBA0TMM108
IC1405		DRIVER FOR DVD MM1637XVBE	QSZBA0TMM102
IC1406		IC ANALOG MULTIPLEXER CD4053BNSR	NSZBA0TTY093
IC1503		VOLTAGE REGULATOR PQ070XF01SZH	QSZBA0SSH054
IC1504		VOLTAGE REGULATOR PQ070XF01SZH	QSZBA0SSH054
COILS			
L200		INDUCTOR(100μH K) LAP02TA101K	LLAXKATTU101
L202		PCB JUMPER D0.6-P5.0	JW5.0T
L251		PCB JUMPER D0.6-P5.0	JW5.0T
L303		INDUCTOR(100μH K) LAP02TA101K	LLAXKATTU101
L304		CHOKE COIL 47μH-K	LLBD00PKV005
L421		INDUCTOR 47μH-K-5FT	LLARKBSTU470

Ref. No.	Mark	Description	Part No.
L422		INDUCTOR 22μH-K-26T	LLAXKATTU220
L423		PCB JUMPER D0.6-P5.0	JW5.0T
L451		PCB JUMPER D0.6-P5.0	JW5.0T
L501		INDUCTOR(100μH K) LAP02TA101K	LLAXKATTU101
L502		CHOKE COIL 47μH-K	LLBD00PKV005
L503		INDUCTOR 12μH-K-26T	LLAXKATTU120
L505		INDUCTOR(100μH K) LAP02TA101K	LLAXKATTU101
L771		PCB JUMPER D0.6-P5.0	JW5.0T
L800		PCB JUMPER D0.6-P5.0	JW5.0T
L801		PCB JUMPER D0.6-P5.0	JW5.0T
L900		PCB JUMPER D0.6-P5.0	JW5.0T
L901A		CHOKE COIL 47μH-K	LLBD00PKV005
L1351		INDUCTOR(0.47μH K) LAP02TAR47K	LLAXKATTUR47
L1441		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
L1461		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
L1481		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
L1521		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
L1522		CHOKE COIL 47μH-K	LLBD00PKV005
L1523		PCB JUMPER D0.6-P5.0	JW5.0T
TRANSISTORS			
Q052		RES. BUILT-IN TRANSISTOR KRC103M	NQSZ0KRC103M
Q055		TRANSISTOR 2SC1815-Y(TE2 F T)	QQSY2SC1815F
Q056		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q057		TRANSISTOR 2SC1815-Y(TE2 F T)	QQSY2SC1815F
Q101		TRANSISTOR 2SC3266-GR(TPE2 F)	QQS12SC3266F
Q102		TRANSISTOR KTA1266(Y)	NQSY0KTA1266
Q103		TRANSISTOR KTC3199(Y)	NQSY0KTC3199
Q104		TRANSISTOR KTA1267(Y)	NQSY0KTA1267
Q105		TRANSISTOR KTC3199(Y)	NQSY0KTC3199
Q107		TRANSISTOR KTA1267(Y)	NQSY0KTA1267
Q108		RES. BUILT-IN TRANSISTOR KRC103M	NQSZ0KRC103M
Q205		RES. BUILT-IN TRANSISTOR KRC103M	NQSZ0KRC103M
Q301		TRANSISTOR KTA1266(Y)	NQSY0KTA1266
Q302		TRANSISTOR KTC3193(Y)	NQSY0KTC3193
Q303		TRANSISTOR KTC3193(Y)	NQSY0KTC3193
Q391		TRANSISTOR KTA1266(Y)	NQSY0KTA1266
Q421		TRANSISTOR KTA1266(Y)	NQSY0KTA1266
Q422		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q425		RES. BUILT-IN TRANSISTOR KRA103M	NQSZ0KRA103M
Q426		CHIP TRANSISTOR RN1511(TE85R)	QQ2Z00RN1511
Q428		TRANSISTOR KTC3199(Y)	NQSY0KTC3199
Q429		TRANSISTOR KTC3199(Y)	NQSY0KTC3199
Q430		TRANSISTOR KTA1266(Y)	NQSY0KTA1266
Q432		RES. BUILT-IN TRANSISTOR KRC103M	NQSZ0KRC103M
Q501		TRANSISTOR KTC3199(BL)	NQS50KTC3199
Q506		PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12
Q509		RES. BUILT-IN TRANSISTOR KRC103M	NQSZ0KRC103M
Q510		TRANSISTOR KTC3199(Y)	NQSY0KTC3199
Q561		TRANSISTOR KTC3199(Y)	NQSY0KTC3199
Q562		TRANSISTOR KTC3199(Y)	NQSY0KTC3199
Q563		TRANSISTOR KTC3199(Y)	NQSY0KTC3199
Q804		TRANSISTOR KTA1266(Y)	NQSY0KTA1266
Q805		TRANSISTOR KTC3199(Y)	NQSY0KTC3199
Q806		TRANSISTOR KTC3199(Y)	NQSY0KTC3199
Q1303		TRANSISTOR KTC3199(BL)	NQS50KTC3199
Q1304		TRANSISTOR KTC3199(BL)	NQS50KTC3199
Q1305		TRANSISTOR KTA1267(Y)	NQSY0KTA1267
Q1351		TRANSISTOR KTC3199(Y)	NQSY0KTC3199
RESISTORS			
R056		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R057		CARBON RES. 1/6W J 150 Ω	RCX6JATZ0151
R064		CHIP RES.(1608) 1/10W F 1.5k Ω	RRXAFR5H0152

Ref. No.	Mark	Description	Part No.
R065		CHIP RES. 1/10W F 820 Ω	RRXAFR5H0821
R073		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R075		CARBON RES. 1/6W J 4.7k Ω	RCX6JATZ0472
R092		CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R095		CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R097		CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R104		CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R106		CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R107		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R108		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R109		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R112		CARBON RES. 1/4W J 5.6 Ω	RCX4JATZ05R6
R113		CARBON RES. 1/4W J 8.2 Ω	RCX4JATZ08R2
R115		CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R116		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R117		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R118		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R125		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R126		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R127		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJR5Z0562
R128		CARBON RES. 1/4W J 10 Ω	RCX4JATZ0100
R129		CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R132		CARBON RES. RD1/2S101JTA	RCX2JATZ0101
R133		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R221		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R222		CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H0103
R223		CHIP RES.(1608) 1/10W F 1.5k Ω	RRXAFR5H0152
R224		CHIP RES. 1/10W F 15k Ω	RRXAFR5H0153
R225		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R226		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R228		CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJR5Z0272
R229		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R230		CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H0103
R231		CHIP RES.(1608) 1/10W F 120 Ω	RRXAFR5H0121
R232		CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H0103
R234		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R235		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R301		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R302		CHIP RES.(1608) 1/10W J 12k Ω	RRXAJR5Z0123
R304		CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R306		CHIP RES.(1608) 1/10W J 3.9M Ω	RRXAJR5Z0395
R307		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R308		CHIP RES.(1608) 1/10W J 82k Ω	RRXAJR5Z0823
R309		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R310		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R311		CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R312		CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R313		CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R314		CHIP RES.(1608) 1/10W J 680k Ω	RRXAJR5Z0684
R316		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R317		CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R321		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R322		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R323		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R324		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R327		CHIP RES.(1608) 1/10W F 1.2k Ω	RRXAFR5H0122
R391		CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R392		CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R395		PCB JUMPER D0.6-P5.0	JW5.0T
R397		CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R401		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R402		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJR5Z0562
R409		CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822

Ref. No.	Mark	Description	Part No.
R410		CHIP RES.(1608) 1/10W J 12k Ω	RRXAJR5Z0123
R411		CHIP RES.(1608) 1/10W J 330k Ω	RRXAJR5Z0334
R412		CHIP RES.(1608) 1/10W J 150 Ω	RRXAJR5Z0151
R413		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R414		CHIP RES.(1608) 1/10W J 910 Ω	RRXAJR5Z0911
R415		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R421		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R422		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R424		CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R425		CARBON RES. 1/6W J 100 Ω	RCX6JATZ0101
R426		CARBON RES. 1/6W J 820 Ω	RCX6JATZ0821
R450		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R451		CHIP RES.(1608) 1/10W J 12k Ω	RRXAJR5Z0123
R452		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R453		CHIP RES.(1608) 1/10W J 27k Ω	RRXAJR5Z0273
R454		CHIP RES.(1608) 1/10W J 27k Ω	RRXAJR5Z0273
R455		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R456		CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R460		CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R461		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R462		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R463		CHIP RES.(1608) 1/10W J 27k Ω	RRXAJR5Z0273
R464		CHIP RES.(1608) 1/10W J 27k Ω	RRXAJR5Z0273
R465		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R466		CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R468		CHIP RES.(1608) 1/10W J 120k Ω	RRXAJR5Z0124
R469		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R471		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R473		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R474		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R476		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R477		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R488		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R489		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R491		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R502		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R503		CHIP RES.(1608) 1/10W J 820 Ω	RRXAJR5Z0821
R504		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R506		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R508		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R511		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJR5Z0393
R517		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R518		CHIP RES.(1608) 1/10W J 220k Ω	RRXAJR5Z0224
R521		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R523		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R524		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R525		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R526		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R527		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R528		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R531		CHIP RES.(1608) 1/10W F 4.7k Ω	RRXAFR5H0472
R532		CHIP RES.(1608) 1/10W F 1.5k Ω	RRXAFR5H0152
R533		CHIP RES.(1608) 1/10W F 22k Ω	RRXAFR5H0223
R534		CHIP RES. 1/10W F 470 Ω	RRXAFR5H0471
R535		CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H0103
R536		CHIP RES.(1608) 1/10W F 3.6k Ω	RRXAFR5H0362
R537		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R540		CHIP RES.(1608) 1/10W J 390k Ω	RRXAJR5Z0394
R541		CHIP RES.(1608) 1/10W J 390k Ω	RRXAJR5Z0394
R542		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R543		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R544		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R545		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103

Ref. No.	Mark	Description	Part No.
R546		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R547		CARBON RES. 1/6W J 1k Ω	RCX6JATZ0102
R548		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R549		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJR5Z0473
R550		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R551		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R556		CARBON RES. 1/6W J 47k Ω	RCX6JATZ0473
R559		CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R561		CARBON RES. 1/6W J 3.9k Ω	RCX6JATZ0392
R562		CARBON RES. 1/6W J 150 Ω	RCX6JATZ0151
R563		CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R564		CARBON RES. 1/6W J 150 Ω	RCX6JATZ0151
R565		CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R566		CARBON RES. 1/6W J 150 Ω	RCX6JATZ0151
R585		CARBON RES. 1/6W J 10 Ω	RCX6JATZ0100
R590		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R591		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R592		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R595		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R601		CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R602		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R603		CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R604		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R605		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R606		CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R607		CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R608		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R611		CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R612		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R613		CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJR5Z0122
R614		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R615		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R616		CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJR5Z0392
R617		CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJR5Z0822
R618		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R622		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R627		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R630		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R641		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R642		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R643		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R644		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R645		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R646		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R647		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R648		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R650		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R651		CHIP RES.(1608) 1/10W J 560 Ω	RRXAJR5Z0561
R702		CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R751		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R777		CARBON RES. 1/6W J 39k Ω	RCX6JATZ0393
R778		CARBON RES. 1/6W J 10k Ω	RCX6JATZ0103
R806		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R807		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJR5Z0153
R808		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJR5Z0153
R809		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R810		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R825		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJR5Z0153
R826		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R827		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJR5Z0153
R828		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R829		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJR5Z0153
R830		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333

Ref. No.	Mark	Description	Part No.
R831		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJR5Z0153
R832		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJR5Z0333
R833		CARBON RES. 1/6W J 18k Ω	RCX6JATZ0183
R834		CHIP RES.(1608) 1/10W J 27k Ω	RRXAJR5Z0273
R835		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJR5Z0183
R836		CHIP RES.(1608) 1/10W J 27k Ω	RRXAJR5Z0273
R837		CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H0103
R838		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R839		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJR5Z0682
R840		CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H0103
R841		CHIP RES. 1/10W F 18k Ω	RRXAFR5H0183
R843		CHIP RES. 1/10W F 18k Ω	RRXAFR5H0183
R847		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R852		CHIP RES.(1608) 1/10W F 8.2k Ω	RRXAFR5H0822
R853		CHIP RES.(1608) 1/10W F 13k Ω	RRXAFR5H0133
R854		CHIP RES.(1608) 1/10W F 13k Ω	RRXAFR5H0133
R855		CHIP RES.(1608) 1/10W F 8.2k Ω	RRXAFR5H0822
R856		CHIP RES.(1608) 1/10W F 13k Ω	RRXAFR5H0133
R857		CHIP RES.(1608) 1/10W F 13k Ω	RRXAFR5H0133
R858		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R859		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R860		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R861		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R862		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R863		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJR5Z0223
R867		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R868		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R871		CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R872		CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R875		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R876		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R900		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R902		CHIP RES.(1608) 1/10W J 180k Ω	RRXAJR5Z0184
R907		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
R908		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R909		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJR5Z0101
R910		CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R911		CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R912		CHIP RES.(1608) 1/10W J 330 Ω	RRXAJR5Z0331
R914		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R915		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R1327		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R1329		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJR5Z0152
R1331		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R1332		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R1333		CHIP RES.(1608) 1/10W J 910 Ω	RRXAJR5Z0911
R1334		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJR5Z0471
R1335		CHIP RES.(1608) 1/10W J 820 Ω	RRXAJR5Z0821
R1351		CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R1352		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1353		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1354		CHIP RES.(1608) 1/10W J 220 Ω	RRXAJR5Z0221
R1355		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1356		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJR5Z0104
R1402		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1403		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1404		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1407		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1409		CHIP RES.(1608) 1/10W F 200 Ω	RRXAFR5H0201
R1421		CHIP RES.(1608) 1/10W F 220 Ω	RRXAFR5H0221
R1422		CHIP RES.(1608) 1/10W J 5.1k Ω	RRXAJR5Z0512
R1441		CHIP RES.(1608) 1/10W F 200 Ω	RRXAFR5H0201
R1443		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750

Ref. No.	Mark	Description	Part No.
R1461		CHIP RES.(1608) 1/10W F 200 Ω	RRXAFR5H0201
R1462		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1481		CHIP RES.(1608) 1/10W F 200 Ω	RRXAFR5H0201
R1482		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R1521		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJR5Z0222
R1615		CARBON RES. 1/6W J 2.2k Ω	RCX6JATZ0222
R1616		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJR5Z0332
SWITCHES			
SW511		LEAF SWITCH MXS01830MVP0	SSC0101MCE03
SW512		ROTARY MODE SWITCH SSS-53MD	SSR0106KB003
SW602		TACT SWITCH KSM0614B	SST0101HH013
SW603		TACT SWITCH KSM0614B	SST0101HH013
SW604		TACT SWITCH KSM0614B	SST0101HH013
SW605		TACT SWITCH KSM0614B	SST0101HH013
SW606		TACT SWITCH KSM0614B	SST0101HH013
SW607		TACT SWITCH KSM0614B	SST0101HH013
SW608		TACT SWITCH KSM0614B	SST0101HH013
SW609		TACT SWITCH KSM0614B	SST0101HH013
SW611		TACT SWITCH KSM0614B	SST0101HH013
SW613		TACT SWITCH KSM0614B	SST0101HH013
SW616		TACT SWITCH KSM0614B	SST0101HH013
MESCELLANEOUS			
2B16		BUSH LED(F) H3700UD	0VM409508
2B17		SHIELD ASSEMBLY H9200UD	0VM413279A
FM1001		DC FAN MOTOR 2410RL-04W-S20-C01	MMEZR12NM005
FIP501		VACUUM FLUORESCENT DISPLA 7-BT-301NS	TVFD1C0FT049
JC2		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC5		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC6		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC31		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC33		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC34		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC35		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC36		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC37		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JC38		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
JK751		RCA JACK MSP-213V1-324-B NI L	JXRL030LY104
JK804		RCA JACK MSP-213V3-324-B NI L	JYRL030LY025
JK805		RCA JACK MSP-382V-12 PBSN	JXRL020LY063
JK1202		RCA JACK(BLACK) MSP-281V2-B	JXRL010LY062
JK1401		S TYPE JACK(2P) MDC-021V-AA LF	JYEL040LY004
JK1403		RCA JACK MSP-213V1-652-B NI L	JXRL030LY116
RS501		REMOTE RECEIVER MIM-93M6DKF	USESJRSUNT01
TP301		PCB JUMPER D0.6-P5.0	JW5.0T
TP302		PCB JUMPER D0.6-P15.0	JW15.0T
TP452		PCB JUMPER D0.6-P27.5	JW27.5T
TP502		PCB JUMPER D0.6-P7.5	JW7.5T
TP505		PCB JUMPER D0.6-P15.0	JW15.0T
TP506		PCB JUMPER D0.6-P5.0	JW5.0T
TP507		PCB JUMPER D0.6-P12.5	JW12.5T
TP513		PCB JUMPER D0.6-P7.5	JW7.5T
TP751		PCB JUMPER D0.6-P5.0	JW5.0T
TP753		PCB JUMPER D0.6-P5.0	JW5.0T
TP754		PCB JUMPER D0.6-P5.0	JW5.0T
TU900		TUNER UNIT VH025AFE	UTUNNTUSP026
VR501		CARBON P.O.T. VZ067TL1 B104 PB(F)	VRCB104HH014
W01		FFC CABLE 30P FFC/P1.00/110	WX1E9600-001
W02		FFC CABLE 30P FFC/P1.00/110	WX1E9600-001
X301		XTAL 3.579545MHz(20PPM)	FXC355LLN003
X502		XTAL 32.768kHz(20PPM)	FXC323LCHE01

POWER SW CBA

Ref. No.	Mark	Description	Part No.
		POWER SW CBA (MCV-B) Consists of the following	----------
		DIODE	
D561		LED(RED) 204HD/E	NPQZ00204HDE
		SWITCH	
SW601		TACT SWITCH KSM0614B	SST0101HH013
		MESCELLANEOUS	
W001		PARALLEL WIRE 4P AWG26#2651/P2.0/100	WX1E9600-003

FUNCTION CBA

Ref. No.	Mark	Description	Part No.
		FUNCTION CBA (MCV-C) Consists of the following	----------
		SWITCHES	
SW615		TACT SWITCH KSM0614B	SST0101HH013
SW617		TACT SWITCH KSM0614B	SST0101HH013
		MESCELLANEOUS	
W002		PARALLEL WIRE 3P AWG26#2651/P2.0/80	WX1E9400-003

JACK CBA

Ref. No.	Mark	Description	Part No.
		JACK CBA (MCV-D) Consists of the following	----------
		CONNECTOR	
CN1605		FE CONNECTOR TOP 8P 08FE-BT-VK-N	JCFEJ08JG001
		RESISTORS	
R804		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R812		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
R815		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJR5Z0750
		MESCELLANEOUS	
JK800		RCA JACK(RED) MTJ-032-11A-31 FE01	JYRL010LY024
JK801		RCA JACK(WHITE) MTJ-032-11B-41 FE01	JXRL010LY102
JK803		RCA JACK(YELLOW) MTJ-032-11B-40 FE01	JXRL010LY101
JK806		S TYPE JACK MDC-050V-2.4	JXEL040LY001
W03		FFC CABLE 8P FFC/P1.25/105	WX1E9600-002

SENSOR CBA

Ref. No.	Mark	Description	Part No.
		SENSOR CBA Consists of the following	1VSA10080
		TRANSISTORS	
Q503		PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12
Q504		PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12

PSV CBA

Ref. No.	Mark	Description	Part No.
		PSV CBA Consists of the following	1VSA11219
		POWER SUPPLY CBA (PSV-A) JUNCTION CBA (PSV-B)	---------- ----------

POWER SUPPLY CBA

Ref. No.	Mark	Description	Part No.
		POWER SUPPLY CBA (PSV-A) Consists of the following	----------

Ref. No.	Mark	Description	Part No.
		CAPACITORS	
C012		ELECTROLYTIC CAP. 470µF/16V M	CE1CMASDL471
C013		ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMASSL100
C014		ELECTROLYTIC CAP. 470µF/16V M	CE1CMASDL471
C015		ELECTROLYTIC CAP. 1000µF/16V M	CE1CMASDL102
C017		ELECTROLYTIC CAP. 4700µF/6.3V SL	CE0KMZADL472
C018		CERAMIC CAP. B K 220pF/500V	CCD2JKP0B221
C019		ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASDL102
C021		ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASDL471
C023		CERAMIC CAP. B K 470pF/500V	CCD2JKP0B471
C024		ELECTROLYTIC CAP. 22µF/50V M	CE1JMASDL220
C027		ELECTROLYTIC CAP. 3300µF/6.3V SL	CE0KMZADL332
C028		ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASDL102
C029		ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMAVSL101
C030		CHIP CERAMIC CAP.(1608) B K 0.01µF/50V	CHD1JK30B103
C031		CHIP CERAMIC CAP.(1608) B K 0.033µF/50V	CHD1JK30B333
C1001⚠		METALLIZED FILM CAP. 0.068µF/250V M	CT2E683MS037
C1003		CERAMIC CAP. B K 0.01µF/500V	CCD2JKP0B103
C1004		ELECTROLYTIC CAP. 220µF/200V M	CA2D221S6008
C1005		CERAMIC CAP. B K 120pF/500V	CCD2JKP0B121
C1006⚠		SAFETY CAP. 3300pF/250V	CCG2EMA0F332
C1013		CERAMIC CAP.(AX) X K 3300pF/16V	CCA1CKT0X332
C1029		CERAMIC CAP.(AX) X K 2200pF/16V	CCA1CKT0X222
C1032		ELECTROLYTIC CAP. 10µF/16V M H7	CE1CMAVSL100
C1033		CERAMIC CAP. F Z 0.022µF/50V	CCD1JZS0F223
		DIODES	
D012		SCHOTTKY BARRIER DIODE SB390	NDQZ000SB390
D013		RECTIFIER DIODE BA158	NDQZ000BA158
D014		SCHOTTKY BARRIER DIODE SB190	NDWZ000SB190
D015		SCHOTTKY BARRIER DIODE SB340	NDQZ000SB340
D016		SCHOTTKY BARRIER DIODE SB340	NDQZ000SB340
D017		ZENER DIODE DZ-15BSCT265	NDTC00DZ15BS
D018		RECTIFIER DIODE BA158	NDQZ000BA158
D020		PCB JUMPER D0.6-P5.0	JW5.0T
D021		SCHOTTKY BARRIER DIODE SB340	NDQZ000SB340
D022		SCHOTTKY BARRIER DIODE SB140	NDQZ000SB140
D023		RECTIFIER DIODE FR101	NDWZ000FR101
D024		ZENER DIODE DZ-18BSAT265	NDTA00DZ18BS
D025		ZENER DIODE DZ-6.8BSBT265	NDTB0DZ6R8BS
D1001		DIODE 1N5397-B	NDLZ001N5397
D1002		DIODE 1N5397-B	NDLZ001N5397
D1003		DIODE 1N5397-B	NDLZ001N5397
D1004		DIODE 1N5397-B	NDLZ001N5397
D1006		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1007		CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
D1011		RECTIFIER DIODE BA158	NDQZ000BA158
D1012		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1018		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1023		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1024		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D1025		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
		IC	
IC010⚠		PHOTOCOUPLER PS2561A-1(W)	QPEWPS2561A1
		COILS	
L010		INDUCTOR(18UH) TWKB-180K	LLC180KKV006
L012		INDUCTOR(15UH) TWKB-150K	LLC150KKV006
L013		CHOKE COIL 47µH-K	LLBD00PKV005
L1001⚠		LINE FILTER 27MH CGS-LF0059A-NP	LLBG00ZSA012
		TRANSISTORS	
Q031		TRANSISTOR KTA1267(GR)	NQS10KTA1267
Q1001⚠		MOS FET 2SK3563	QFWZ02SK3563

Ref. No.	Mark	Description	Part No.
Q1003		TRANSISTOR 2SC1815-Y(TPE2)	QQSY02SC1815
Q1008		TRANSISTOR KTC3199(Y)	NQSY0KTC3199
		RESISTORS	
R001⚠		GLASS GLAZE RES. 1/2W J 3.3M Ω	RXX2JZLZ0335
R015		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R016		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJR5Z0102
R017		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R018		CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJR5Z0472
R019		CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJR5Z0182
R020		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R021		CHIP RES.(1608) 1/10W F 2.2k Ω	RRXAFR5H0222
R022		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJR5Z0562
R023		CHIP RES.(1608) 1/10W 0 Ω	RRXAJR5Z0000
R1004		METAL OXIDE FILM RES. 2W J 82k Ω	RN02823ZU001
R1005		CARBON RES. 1/4W J 1M Ω	RCX4JATZ0105
R1006		CARBON RES. 1/4W J 1M Ω	RCX4JATZ0105
R1008		CARBON RES. 1/6W G 680 Ω	RCX6GATZ0681
R1010		CARBON RES. 1/6W J 22k Ω	RCX6JATZ0223
R1011		METAL OXIDE FILM RES. 2W J 0.68 Ω	RN02R68ZU001
R1029		CARBON RES. 1/6W J 150k Ω	RCX6JATZ0154
R1032		CARBON RES. 1/6W G 390 Ω	RCX6GATZ0391
R1034		CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R1036		CARBON RES. 1/6W J 100k Ω	RCX6JATZ0104
R1037		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJR5Z0103
R1038		CARBON RES. 1/6W J 100k Ω	RCX6JATZ0104
R1039		CARBON RES. 1/6W J 470k Ω	RCX6JATZ0474
R1043		METAL OXIDE FILM RES. 2W J 1.8 Ω	RN021R8ZU001
R1044		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
		MESCELLANEOUS	
2B18		HEATSINK V2600PZ	0VM409007B
AC1001 ⚠		AC CORD PB8B2F9110A-05A	WAC0172LW013
F1001⚠		FUSE SIC 1A 250V U/C PSE	PAGG20CW3102
FH1001		FUSE HOLDER MSF-015	XH01Z00LY001
FH1002		FUSE HOLDER MSF-015	XH01Z00LY001
2L019		SCREW S-TIGHT M3X8 BIND HEAD+	GBMS3080
T001⚠		SWITCHING TRANSFOMER 5721-S02	LTT00CPKT175

JUNCTION CBA

Ref. No.	Mark	Description	Part No.
		JUNCTION CBA (PSV-B) Consists of the following	---------
		CONNECTOR	
CN1612		CONNECTOR 18P TUC-P18X-B1	JCTUS18TG001
		DIODE	
D2013		RECTIFIER DIODE RL201	NDQZ000RL201
		MESCELLANEOUS	
W003		PARALLEL WIRE 9P AWG26#2651/P2.0/80	WX1E9600-004
W004		PARALLEL WIRE 9P AWG26#2651/P2.0/80	WX1E9600-004

DVR90VF
E9610UD
2005-04-01